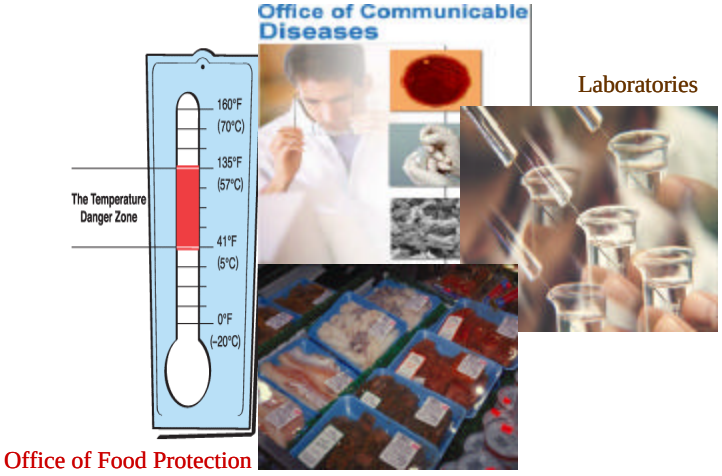
Guidelines for Investigating Foodborne Illness Outbreaks



Rhode Island Department of Health (HEALTH)

Office of Communicable Diseases

Office of Food Protection

Division of Laboratories

2004

Guidelines for Investigating Foodborne Illness Outbreaks

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Office of Communicable Diseases,
Office of Food Protection,
Division of Health Laboratories

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Guidelines for Investigating Foodborne Illness Outbreaks

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Chief, Office of Food Protection Ernest Julian Date 8/18/04

Medical Director, Office of Communicable Diseases [signature] Date 8/6/04

Director, Division of Laboratories Gregory V. Hayes Date 8/6/04

Table of Contents

Section 1
Introduction

A foodborne **illness** is considered to be any illness that is related to food ingestion; gastrointestinal tract symptoms are the most common clinical manifestations of foodborne illnesses. Microorganisms and their toxins, marine organisms and their toxins, fungi and their related toxins, and chemical contaminants can cause foodborne illnesses. A foodborne illness **outbreak** is defined as an incident in which two or more persons experience a similar illness after ingestion of a common food that has been implicated as a likely source of illness by epidemiological analysis.

Public health agencies are the frontline in protecting the public from foodborne illness associated with improper handling of food or poor hygienic practices in retail food establishments. It is the goal of the RI Department of Health (HEALTH) to quickly and efficiently acquire information of sufficient quantity and quality to identify and prevent the ongoing transmission of a foodborne illness. Towards this goal, it is the mission of HEALTH to include the Office of Food Protection, the Office of Communicable Diseases and the Division of Laboratories in a comprehensive and coordinated illness outbreak response team.

The procedures described in these guidelines cover the initial investigations (on site and epidemiological) of a foodborne illness; the exchange of data and information associated with an outbreak between and among the three units within HEALTH; and laboratory support for the testing of clinical specimens, and food samples. The FDA 2001 Food Code (http://vm.cfsan.fda.gov/~dms/foodcode.html) and the Rhode Island Department of Health Food Code R-23, 21-27 FOOD, 1994 (http://www.rules.state.ri.us/rules/released/pdf/DOH/DOH_120_.pdf) (**Appendix M for Chapters 2-2 & 8-5)** are the basis for inspection and regulatory compliance activities in Rhode Island.

The purpose of these guidelines is to set forth the roles of the Office of Food Protection, the Office of Communicable Diseases, and the Division of Laboratories for coordinating responses during a foodborne illness outbreak. Accordingly, these guidelines primarily address those individuals among the three units named above, who will be involved in the investigation and response to a foodborne illness outbreak.

Section 2
Rhode Island Department of Health Phone Numbers

Revised: 07/19/04

Staff for consultation and assistance related to surveillance and reporting of foodborne diseases

DIVISION/PROGRAM	PHONE NO.	CELL PHONE	PAGER	FAX NUMBER
Dr. Patricia Nolan, Director of Health	222-2231	623-0393	1-800-759-7243 PIN # 8796159	222-6548
DIVISION OF DISEASE PREVENTION & CONTROL	222-2577	After hours: Contact the Administrator on call 272-5952		222-2488
John Fulton, PhD, Associate Director (contact Program staff first)	222-1172			222-3551
Utpala Bandy, MD, MPH, State Epidemiologist and Assistant Medical Director	222-2432	480-7690	877-763-5405	222-2488
Office of Communicable Disease				
Linda Mouradjian, RN	222-7533	623-0296	786-7338	222-2488
Sharon Morrow, RN	222-7550	556-2621		222-2488
Carol Browning, RN	222-7542			222-2488
Diane Brady, RN	222-7906			222-2488
Nancy Walsh, RN	222-5936			222-2488
Gale Forbes	222-7528			222-2488
Linda Franco, RN	222-3993	323-4682		222-2488
Linda D'Agostino, RN	222-2553			222-2477
Lenore Normandie, RN	222-7534			222-2488
Kathy King Barton	222-7531			222-2488
Zoanne Parillo	222-7535			222-2488
Tara Cooper, MPH, Epidemiologist	222-3284			222-2488

DIVISION/PROGRAM	PHONE NO.	CELL PHONE	PAGER	FAX NUMBER
DIVISION OF PUBLIC HEALTH LABORATORIES	222-5600	**After hours: Contact the Administrator on call 272-5952**		
Gregory Hayes, DrPh. Associate Director	222-1720	623-0370		222-3332
Ken Jones, Dr Ph, Chief PH Microbiology	222-5596	623-0376		222-4572
Ewa King, Ph.D. Chief PH Chemistry	222-1999			
David Uliss, Ph.D. Chief Forensics	222-5593			
Theodore Pliakas (Food & Water Micro)	222-5588			222-5656
Kerry Patterson (Food & Water Micro)	222-5588			222-5656
Adam Miller (Food & Water Micro)	222-5588			222-5656
R. Jane Wilbur (Food & Water)	222-5588			222-5656
Deanna Simmons (Clinical Micro)	222-5654			222-5656
Cheryl Campbell (Clinical Micro)	222-5654			222-5656
Cynthia Vanner (Special Pathogens)	222-5586			222-4572
Paul Breault (Food Toxicology)	222-5567			
P. Christopher Ellis, PhD (Food Chemistry)	222-5589			
DIVISION OF ENVIRONMENTAL HEALTH		**After hours: Contact the Administrator on call 272-5952**		
Walter S. Combs, Jr., PhD Executive Director	222-3118	623-0459	581-0784	222-6953
OFFICE OF FOOD PROTECTION	222-2749			222-4775
Ernest Julian, PhD, Office Chief	222-4774	623-0471	581-1291	222-4775
Ronald Lee, MS (Chief, EHFS)	222-7712	639-8215	581-1435	222-4775
Stephen DiMaio (Supervisor)	222-7729	639-6431	581-1358	222-4775
John Rosato (Supervisor)	222-7722		581-1468	222-4775
Lillian Berard (Supervisor)	222-7738	639-6428	581-1296	222-4775

DIVISION/PROGRAM	PHONE NO.	CELL PHONE	PAGER	FAX NUMBER
Diane Rafferty, Senior EHFS	222-7720	639-6435	581-1481	222-4775
John Mullen, Senior EHFS	222-7716	639-6478	581-1472	222-4775
Susan Wallace, MS, Compl. S/E Officer	222-7734	639-8225	872-7937	222-4775
Kimberly Langello, MPH (Food Security Coordinator)	222-7719	639-8213	763-2425	222-4775

Section 3

General Foodborne Disease Outbreak Information

3.1 Definition of Foodborne Disease Outbreak

According to the regulatory definition (2001 FDA Model Food Code), a foodborne disease outbreak is defined as: (a) an incident in which two or more persons experience a similar illness after ingestion of a common food(s); and an epidemiological analysis implicates food as a source of the illness. (b) A foodborne disease outbreak may also be indicated by a single case of rare or unusual illness such as one case of botulism.

The Rhode Island Department of Health (HEALTH) may be alerted to the existence of a foodborne outbreak by any one or more of the following events:

3.1.1 A number of enteric illness cases and other diseases associated with foodborne illness are reportable by health care providers and laboratories to the Office of Communicable Diseases (Rules and Regulations Pertaining to the Reporting of Communicable, Environmental and Occupational Diseases R23-10-DIS, 1996). Upon receiving the disease reports, the cases are counted and analyzed weekly to detect clustering by person, place or time, or to note increase in numbers of cases of enteric organisms.

3.1.2 Health care professionals may suspect foodborne illness either because of the organism involved or other available information, such as several ill patients who have eaten the same food. Subsequently the health care provider may report this information to the Office of Communicable Diseases.

3.1.3 An increase in numbers of positive stool cultures for a specific organism in one hospital laboratory serving one area of the state may be noted and reported to the State Laboratory for confirmatory testing.

3.1.4 Foodborne outbreak investigations may also be initiated when someone becomes ill after eating at a restaurant or attending a large catered event and then files a complaint with the Office of Food Protection. The complaint is logged and reviewed to determine if other complaints from the same event have been reported.

The State Epidemiologist will make the decision on whether to launch a full investigation based on the magnitude of the threat to the public and the feasibility of conducting statistically valid studies. The full response to a small or medium size foodborne outbreak requires a team effort between staff from the Office of Communicable Diseases, Office of Food Protection and the Health Laboratory. As necessary, the resources available may be

expanded first within the respective Divisions and then, if recommended by the State Epidemiologist, the Director of HEALTH may decide to activate the Department's Emergency Operations Plan (See Section 9 of this manual).

3.2 Foodborne Disease Outbreak Prevention and Control Activities

The following activities will be activated in the event that a foodborne illness outbreak is suspected. These activities will be guided by the State Epidemiologist:

3.2.1 An epidemiologic investigation to characterize the illness. The process of the investigation includes describing the clinical spectrum of illness (including ordering of lab tests on sick persons), collecting preliminary data, reviewing outbreak curves, and formulating biologically plausible hypotheses

3.2.2 Descriptive and analytical studies (case-control or cohort) to determine the etiology of the foodborne outbreak and to implicate foods or food-handlers as transmission vehicles. This part of the process involves designing and conducting a case-control study selecting cases and controls for detailed interview using a questionnaire. Data from the questionnaire are then entered into a computerized database and analyzed to determine statistically significant associations between specific food items consumed and the incurred illness.

3.2.3 Detailed environmental investigation to determine the environmental causes that contributed to the outbreak and to recommend appropriate control measures. The environmental investigation will focus on the preparation and service of the implicated food(s) to determine the risk of contamination and temperature abuse. Suspect leftovers and foods found to be at risk for contamination from an infected food handler, from poor food handling practices or procedures, or from a product purchased from an unapproved source (i.e. clams, illegally harvested from contaminated beds) must be embargoed and samples of the contaminated food(s) collected for laboratory analysis. Employees must be questioned to determine if they have been ill within the previous two weeks before onset of the outbreak. Employees with diarrhea or potentially communicable illnesses must be excluded from food preparation and the handling of clean dishes and utensils. The Department of Health (HEALTH) may choose to exercise its power (Rhode Island Department of Health Food Code R-23, 21-27 FOOD, 1994 Section 8-6 (http://www.rules.state.ri.us/rules/released/pdf/DOH/DOH_120_.pdf) to issue an emergency closure or suspension order when an imminent health hazard exists. Examples of hazards that may invoke a closure or suspension include (but are not

limited to): suspect food handlers, the lack of refrigeration, or the lack of running water. The source of any suspect food or food items will also be determined when there is the possibility that the food arrived contaminated at the time of delivery.

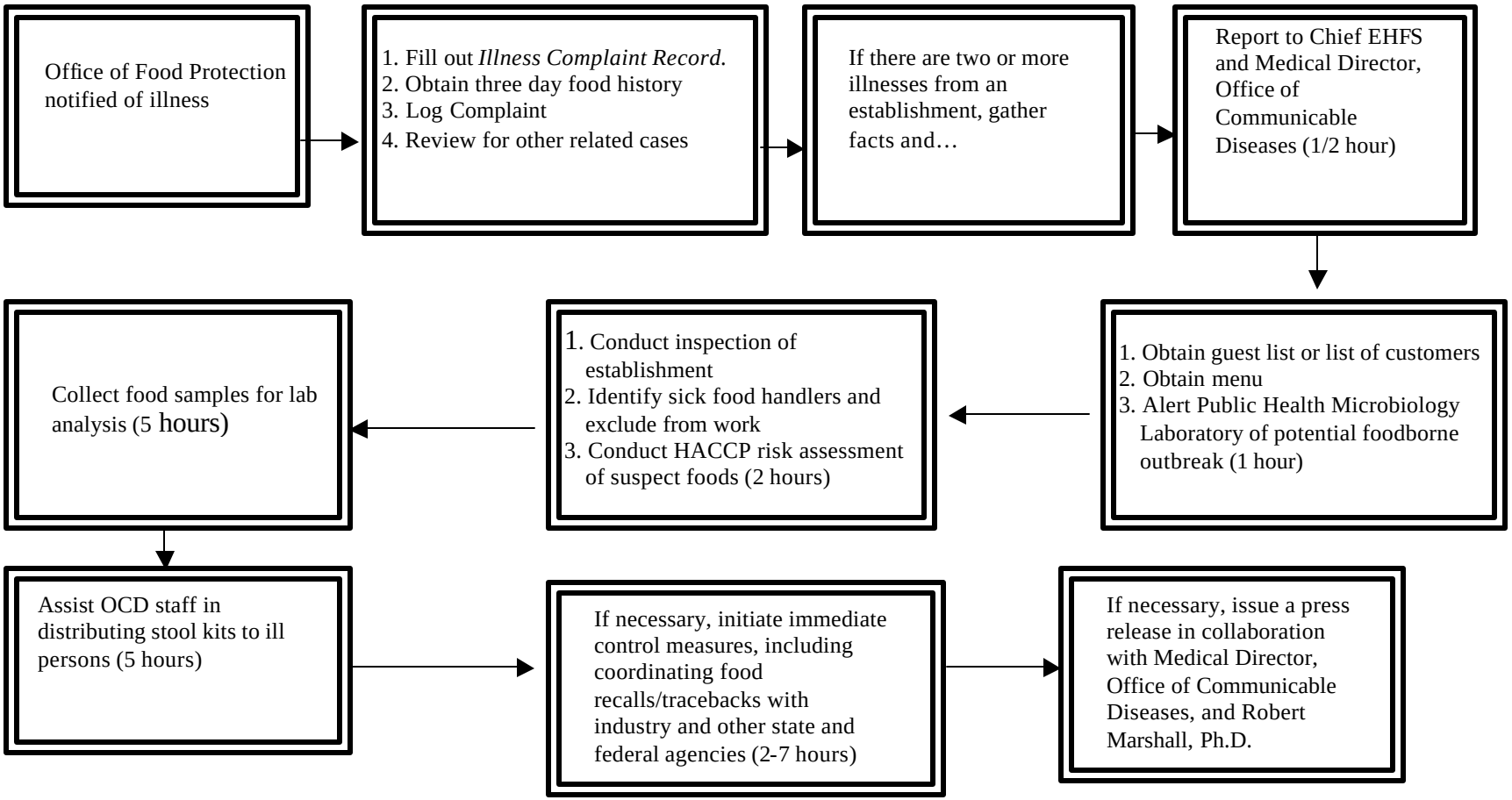
Note: The Department of Health is not authorized to conduct an investigation in a private home. The RI Department of Health (HEALTH) will attempt to conduct a Hazard Analysis and Critical Control Point (HACCP) inspection with the homeowner or person making the complaint. HACCP is a systematic approach to the identification, evaluation, and control of food safety hazards. The HACCP process involves conducting a risk assessment based on an interview with the food preparer to identify the possible source(s) of contamination. Advice and educational materials on safe food handling practices will be offered, and the prevention of further illnesses will be promoted by recommending that sick individuals seek medical attention. If a commercially processed food is suspect as the source of contamination in the home, the Office of Food Protection will obtain product information, i.e. name of item, purchase location, and date of purchase, and if possible, leftovers and comparison samples from the place of purchase for laboratory analysis.

3.2.4 Laboratory testing on human and environmental specimens to provide definitive etiologic diagnosis or to rule out or rule in an organism or toxin.

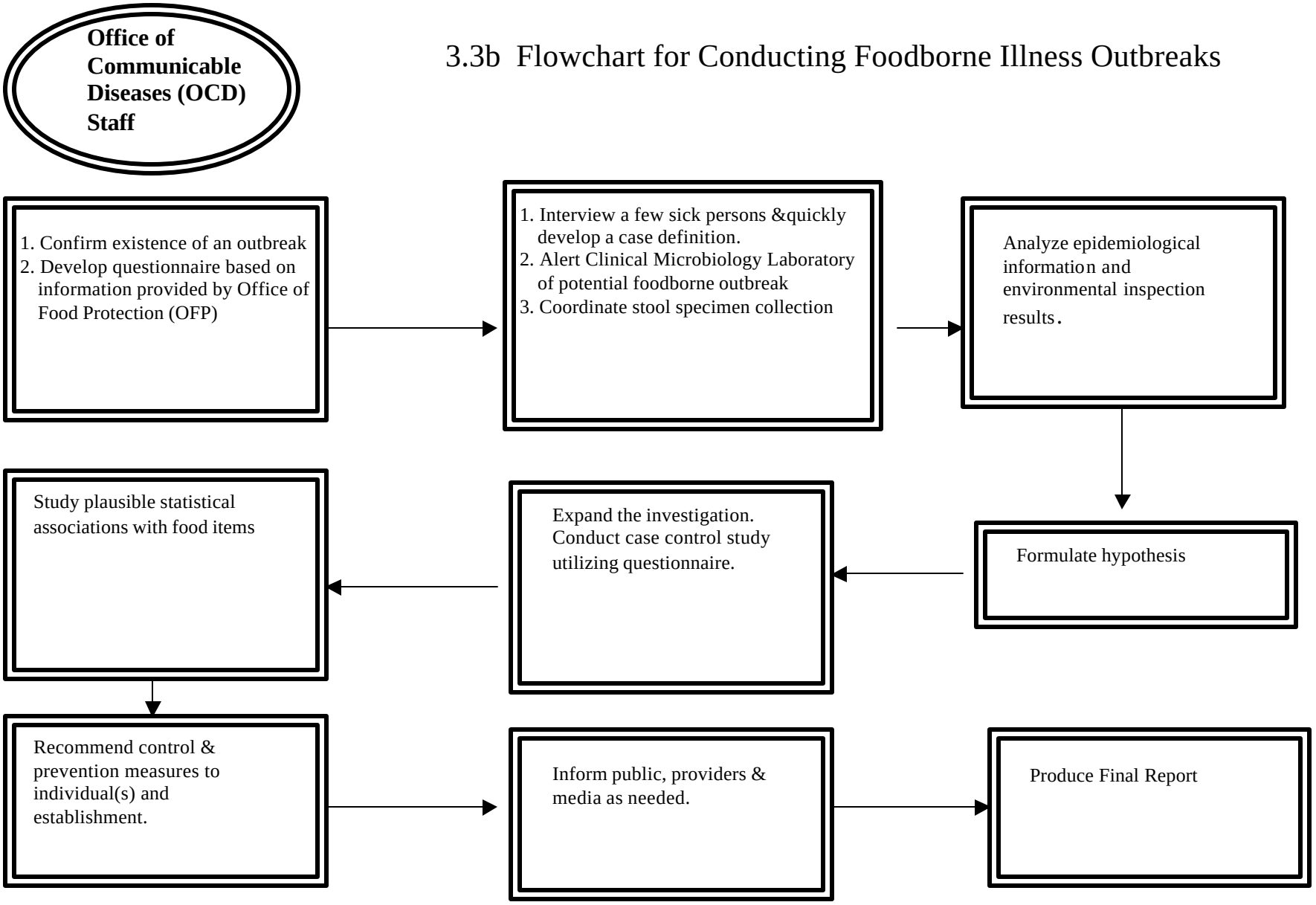
3.3 Flowcharts showing the Activities of a Foodborne Illness Outbreak Investigation

Office of Food Protection (FP) staff

3.3a Flowchart for Conducting Foodborne Illness Outbreaks



3.3b Flowchart for Conducting Foodborne Illness Outbreaks



Section 4
Teams, Team Responsibilities and Tasks for Investigating a Foodborne Illness Outbreak

4.1 Policy:

Teams from the Office of Communicable Diseases, the Office of Food Protection, and the Health Laboratories will work collaboratively to investigate the foodborne outbreak when the existence of a foodborne outbreak is confirmed.

4.2 Teams, Team Personnel and Responsibilities:

4.2.1 Foodborne Outbreak Team for the Office of Communicable Diseases

Team Leader: State Epidemiologist

Team Members: Public Health Nurses, Epidemiologists and Disease Control Representatives from the Division of Disease Prevention and Control

Responsibilities: The Foodborne Outbreak Team for the Office of Communicable Diseases is responsible for coordinating the outbreak operations including overseeing and conducting the epidemiological investigation. The State Epidemiologist and her/his team is responsible for giving timely updates to the Epi Team, the Public Information Officer (PIO) and to the Director's Office; for notifying other states of the outbreak, if necessary; for reporting the outbreak to the Centers for Disease Control (CDC); and for writing the final report.

Tasks/Responsibilities

Team Leader (Medical Director, Office of Communicable Diseases)

- Coordinates the outbreak investigation.
- Communicates with the Health Director and PIO concerning the status of the Outbreak Investigation.
- Documents the conditions leading up to event and the current status of the outbreak situation.
- Provides "point of contact" information for surveillance and epidemiology issues.
- Informs the member(s) of the Epi-Team regarding the investigation as warranted.
- Prepares Health Alerts for Physicians and other identified groups.

- Provides just-in-time direction and training to nurses, disease control representatives and epidemiologists in case surveillance and investigation procedures and policies.
- Serves as a Liaison with relevant departmental, intrastate/interstate and national health authorities.

During a major public health crisis, the Director of Health may activate the Incident Command System. Thus an additional task of physicians would be to advise the Incident Command Team on situational updates, disease control, treatment and prophylaxis recommendations. (see section on ICS)

Consultant Public Health Nurse

- Coordinates and oversees the Public Health nursing staff in conducting the epidemiological investigation (patient interviews and clinical testing of human specimens) both in the Office of Communicable Diseases (OCD) and in the field.
- In coordination with the State Epidemiologist is responsible for coordinating outbreak activities in accordance with OCD policies, procedures, and protocols.
- Serves as a liaison between OCD, Hospitals, and Long Term Care (LTC) Infection Control Practitioners on issues of surveillance, and infection control.
- Provides technical assistance and training to nursing staff on surveillance, control measures, risk communication, risk assessment, and prevention.
- Provides training to staff in HEALTH (trains designated "help line" phone personnel on risk communication messages and other information).
- Provides training, recommendations, and control measures to health care providers and to the general public.

Public Health Nurse

- Conducts epidemiological investigation of foodborne incident using standard OCD protocols for obtaining information from all persons reported to be ill, as well as from persons not ill who may have eaten the same food(s) or who may have participated in the same function.
- Coordinates clinical testing of human specimens as required with the appropriate section(s) within the Division of Health Laboratories, as directed by the Consultant Public Health Nurse.
- Maintains contact with hospital Infection Control Practitioners to monitor for new cases of disease.

- Depending on the disease and nature of the foodborne disease outbreak provides on-site technical assistance to clinic sites (i.e. Hepatitis A IG clinics).

Epidemiologists

- Manage data
- Design analytical study (case-control or cohort)
- Formulate sensitive and specific case definitions.
- Develop system for collecting surveillance information.
- Create case report forms and questionnaires.
- Describe descriptive epidemiology of outbreak (age, gender, incubation period, symptoms, signs, labs, epidemic curve, calculate attack rate etc.).
- Present results of statistical analysis of case-control or cohort study.
- Prepare summary tables, reports and visuals.
- Assist with outbreak investigation, field investigations, interviewing cases etc.
- Prepare a final report based on an analysis of findings provided by the Office of Communicable Disease, the Office of Food Protection and the Division of Health Laboratories. Provide a copy of this report to the Chief Environmental Health Food Specialist (EHFS). The Division of Health Laboratories will be provided a copy of this report, if food testing and/or cultures are involved.

Disease Control Representatives

- Assist with outbreak investigation as needed (field investigations, interview cases, provide phone coverage, etc.)
- Provide support in educating the general public and collecting exposure information from at- risk individuals.

Office Chief

- Obtains personnel support if basic capacity is overwhelmed
- Plans for immediate personnel and budget needs during the outbreak and facilitates emergency purchases

4.2.2 Foodborne Disease Outbreak Team for the Office of Food Protection

Team Leader: Chief EHFS

Team Members: Supervising EHFS, EHFS, Epi-Team Members

Responsibilities: The team from the Office of Food Protection is responsible for overseeing and conducting the environmental investigation; for implementing appropriate control measures to prevent additional illness, including conducting a traceback if necessary; for contacting the appropriate Federal and State agencies to institute a recall when needed; for giving timely updates to the Epi Team, the public information officer (PIO) and the Director's Office concerning the status of the environmental investigation; for notifying other States when necessary.

Responsibilities/Tasks:

Chief Environmental Health Food Specialist

- Notifies the Chief, Office of Food Protection, at the onset of the foodborne illness outbreak investigation.
- Coordinates investigative activities within the Office of Food Protection.
- Provides a guest list or list of customers and the menu for the event to the Medical Director, Office of Communicable Diseases, within one hour of arriving at food establishment.
- Coordinates food testing with the appropriate sections of the Division of Health Laboratories.
- Promptly informs the Medical Director, Office of Communicable Disease, and the Chief, Office of Food Protection, regarding the results of the Office of Food Protection's investigation.
- Provides the assigned Disease Control epidemiologist a summary of the environmental investigation to be included in the final outbreak report.

NOTE: The Chief EHFS (or the Chief, Office of Food Protection, in the absence of the Chief EHFS) will assign at least two EHFS to a foodborne illness outbreak investigation. One EHFS must be a member of the Epi-Team. If the outbreak is less than 3-days old, one member of the inspection staff needs to be present at the suspect food establishment within 1.5 hours of the reporting of an outbreak.

Supervising Environmental Health Food Specialist

- Assists the Chief EHFS in the coordination of the foodborne illness investigation
- Obtains a guest list or list of customers and the menu for the event and provides information to the Chief EHFS.
- Submits the completed Investigation Report with a copy of the complaint record to clerical staff for filing in the establishment(s) file.
- Enters the complaint in the Illness Complaint Log, and records all findings when the investigation is completed.
- Promptly checks food establishment file for history of complaints and critical violations.

Epi-Team Member and Environmental Health Food Specialist or Food Security Coordinator

- Conduct an environmental investigation of the food establishment(s), inquire if employees are ill or have been ill, and implement control measures such as embargoing leftover suspect foods and excluding ill employees.
- Obtain a list of attendees at event or food establishment and fax to supervisor as soon as possible.
- Obtain a list of items served, including ingredient list and the establishment's daily menu. Fax lists to supervisor as soon as received.
- Inform Chief EHFS of findings of the inspection and interviews at the food establishment(s). Submit the inspection report(s) and a copy of the complaint record to the appropriate Supervising EHFS.

After-hours protocol (e.g. evenings, weekends, holidays, etc.): The person "on call" will notify the Chief EHFS and the State Epidemiologist. The Chief, Office of Food Protection will be contacted if the Chief EHFS is not available. A Senior EHFS or an EHFS on the Epi-Team will be contacted from the overtime list. If no one accepts the assignment, the least senior member of the Epi-Team is required to take the assignment. Depending on the extent of the outbreak and/or the size of the food establishment, more than one Epi-Team member may be contacted. The Chief of Communicable Disease and/or State Epidemiologist will mobilize staff to respond.

Any **press releases** of foodborne illness outbreaks will be issued according to the Department of Health's policy (**See Appendix N**). Press

contact will be strictly centralized through Dr. Bob Marshall, Ph.D., HEALTH'S Public Information Officer.

4.2.3 The Division of Laboratories Foodborne Disease Outbreak Team

Team Leader: Associate Director of Health (Laboratories)

Team Members: Chief Clinical Laboratory Scientist (PHM)
Public Health Microbiology:
Clinical Microbiology Staff: Supervising Clinical Laboratory Scientist (PHM), Principal Clinical Laboratory Scientist (PHM), Senior Clinical Laboratory Scientist (PHM), Clinical Laboratory Scientist (PHM), Clinical Laboratory Technician

Food and Water Microbiology Staff: Supervisor Clinical Laboratory Scientist (PHM), 3 Senior Clinical Laboratory Scientists (PHM), Clinical Laboratory Scientist (PHM)
Food Chemistry Staff: Supervisor, Food Chemistry; Senior Food Chemist
Serology Staff: Supervising Clinical Laboratory Scientist (PHM), Principal Clinical Laboratory Scientist (PHM), Senior Clinical Laboratory Scientist (PHM), Clinical Laboratory Scientist (PHM), Clinical Laboratory Technician

Laboratory Team Overall Responsibility: The Laboratory Foodborne Outbreak Team is responsible for receiving and testing and/or referring specimens associated with foodborne outbreaks to CDC or to other appropriate laboratories, and for the reporting of human and environmental testing laboratory results.

Responsibilities/Tasks:

Laboratory Director

- Serves as a member of the Director's Outbreak Management Team and relays relevant information to the Chief Clinical Laboratory Scientist.
- Responsible for determining the laboratory staffing necessary to respond appropriately to the outbreak.
- Responsible for assembling, maintaining and updating a list of Laboratory Team member's home phone numbers, cell phones and beeper numbers, in order to contact and/or call in appropriate staff.
- Responsible for notifying the Laboratory Directors from local hospitals and private laboratories of the outbreak and for providing them with appropriate specimen selection, collection and transport information.

- Responsible for notifying the State Laboratory Directors from surrounding states about the outbreak if appropriate.

Chief Clinical Laboratory Scientist

- Assists Laboratory Director in identifying and contacting the appropriate staff to respond to the outbreak.
- Assigns an appropriate Supervisor and/or Laboratory Team member (Laboratory Outbreak Coordinator) to act as the point person for the laboratory's outbreak response. If more than one laboratory section is involved, each section shall have a coordinator.
- Serves as liaison between the Laboratory Director and the Laboratory Outbreak Coordinator.
- Supports the Laboratory Outbreak Coordinator as needed.
- Facilitates the transportation of specimens from hospital laboratories, private laboratories, and physician's offices as needed.
- Serves as the liaison to the Office of Food Protection and the Division of Disease Prevention and Control.

Laboratory Outbreak Coordinator (Supervisor or Principal level Laboratory Team member)

- Serves as the point person for coordinating the laboratory's testing and/or referral of outbreak specimens.
- Responsible for insuring the timely and accurate reporting of laboratory results.
- Serves as the single point of contact for the issuance of laboratory reports to the Division of Disease Prevention and Control.
- Responsible for compiling appropriate guidelines for specimen selection, collection and transport.
- Responsible for keeping the Chief Clinical Laboratory Scientist informed as to the status of laboratory testing.
- Serves as the point person between the laboratory and the CDC.
- Oversees the referral of specimens to the CDC or other outside laboratory when necessary.
- Responsible for maintaining the chain of custody as appropriate.

Section 5

Office of Food Protection
Procedures to Conduct Environmental Investigations

5.1 Response To A Foodborne Illness Complaint

5.1.1 Policy

The Office of Food Protection receives and investigates foodborne illness complaints. Foodborne illness complaints involving two or more individuals who experience a similar illness after ingestion of a common food(s) are investigated as an alleged foodborne illness outbreak.

5.1.2 Procedure:

5.1.2.1 A foodborne illness complaint may be taken via telephone, in person, or by mail. **Illness complaints must not be forwarded to voice mail.**

5.1.2.2 A Supervising Environmental Health Food Specialist (EHFS) will interview all complainants reporting an illness. If a supervisor is unavailable to take the call, only those staff members in the order listed will interview the complainant: Senior EHFS, Epi-team member, EHFS, Chief EHFS, Chief, Office of Food Protection.

5.1.2.3 The interviewer of the complainant must ask all questions contained in the Office of Food Protection's "Food Related Illness Complaint Record" and record responses (**Appendix A)**.

5.1.2.4 During the course of the interview, if the complainant(s) asks questions regarding individual medical problems, refer them to their personal physician.

5.1.2.5 When the interview is completed, the interviewer logs the complaint and places a **copy** of the complaint in the foodborne illness complaint log. The interviewer, if not a Supervisor, will also provide the appropriate Supervising EHFS with a **copy** of the complaint record. The yellow original is given to the Chief EHFS. Note: Each illness complaint should be given a unique identifying number even though the complainant may provide illness

information for more than one person (ex. mother for child/children). Under the heading, "No. of Illnesses," write 1 of 2, 1 of 3, etc. depending on the situation. While secondhand information regarding other persons who reportedly were ill may be helpful, try to obtain those individuals' telephone numbers and relationship(s) to the complainant, and interview each person directly.

5.1.2.6 The Supervising EHFS will review the foodborne illness complaint log to determine if there are other complaints concerning the same event/establishment.

5.1.2.7 If it is suspected from the evaluation of the complainant interview, that a food establishment is the likely cause of illness, the Supervising EHFS will order an inspection of the food establishment.

5.1.2.8 If two or more persons are reported ill, then the interviewer immediately notifies the Chief EHFS or Food Security Coordinator and gives him/her the original record. The Chief EHFS or Food Security Coordinator will notify the Chief of the Office of Food Protection and the appropriate Supervising EHFS of the foodborne illness outbreak. The Chief EHFS is responsible for reporting the alleged foodborne illness outbreak to the Infection Control Nurse or to the Assistant Medical Director in the Office of Communicable Diseases and for coordinating the investigation within the Office of Food Protection. If the Chief EHFS is not available, then the Chief, Office of Food Protection, must be notified. (Refer to Section 4, *Teams, Team Responsibilities and Tasks for Investigating a Foodborne Illness Outbreak).*

5.2 Food Inspection Process During An Outbreak Investigation

5.2.1 The Supervising Environmental Health Food Specialist (EHFS) will review the establishment(s) file(s) for previous complaints and history of Food Code violations.

5.2.2 The EHFS will bring appropriate forms and equipment to the establishment(s).

5.2.3 The EHFS will introduce themselves to the person in charge at the establishment and explain the purpose of the foodborne illness investigation.

5.2.4 The EHFS will identify current and/or previously ill food handlers through interviews, observation, and/or record review.

5.2.5 The EHFS will conduct a HACCP (Hazard Analysis and Critical Control Point) inspection, that will include the following:

5.2.5.1 Identification of ingredients, weight/volume, and steps involved in the preparation of suspect food(s).

5.2.5.2 Identification of the food-handling procedures at each step in the preparation process of suspect food(s).

5.2.5.3 Identification of personnel involved in the preparation of each suspect food item.

5.2.5.4 Identification of potential hazards and critical control points based on observations and/or interview.

5.2.5.5 Identification of violations and initiation of corrective actions.

5.2.5.6 Verification that corrective actions are taken by the establishment(s)

5.3 Guidance on Investigating Illness in Food Handlers

5.3.1 Definition of a Food Handler

A food handler is any person directly preparing or handling food in a food service establishment, health care facility, day care facility, school, or community residential program. A food handler can include the owner, an individual having supervisory or management duties, other employees on the payroll, a family member, a volunteer, a person performing work under contract, or any other person working in a facility.

Note: The form used to interview food handlers during a foodborne outbreak investigation can be found in **Appendix H**.

5.3.2 Impact Of Food Handler's Health On Foodborne Illness

Foodborne illness may occur as a result of contamination of food by an infected food handler. Food handlers may transmit diseases such as Norovirus, Hepatitis A, *Shigella, E. coli* 0157:H7 and *Salmonella* via the fecal oral route. This may occur whether the individual is symptomatic or asymptomatic. *Staphylococcus aureus* may be transmitted to food from infected skin lesions of food handlers through direct contact of the infected lesion with food (hands or arms). It should also be noted that S*taphylococcus aureus* may be present on the face, in the nose or mouth and may be transmitted after touching these areas and then touching food. Refer to **Appendices**, ***CDC Fact Sheets***, for additional information on the other diseases transmitted through food.

5.3.3 What To Do If You Discover A Sick Food Handler

5.3.3.1 Confirm the Illness as a Foodborne illness.

Confirming the illness involves a phone call or a face-to-face interview by qualified HEALTH nursing personnel. The HEALTH nurse who is assigned to perform the interview will gather patient information and will review all the medical findings, including lab tests performed by the individual's health care provider. The medical director of OCD will review all the information for diagnosis and transmission risk. In concert with the food protection team the medical director of OCD will recommend one or more of the following courses of action (**(RI Food Code Section 8-501.20)**:

(A) Restricting the employee's services to specific areas and tasks in a food establishment that present no risk of transmitting the disease,

(B) Exclude the employee from the food establishment; or

(C) Closing the food establishment by summarily suspending a permit to operate in accordance with law.

NOTE: Restrictions or exclusions may be removed according to the criteria outlined in Chapter 2 subpart 2-201.13 of the Rhode Island Food Code.

5.3.3.2 Identify and Dispose of Food Contaminated by Ill or Infected Food Worker

Interview the manager of the food establishment and other food handlers to determine the duties and responsibilities of the ill food handler(s). Determine if there is any food in the establishment that was prepared by the ill food handler(s) and the dates these items were prepared. Embargo these foods and discuss disposition with your EHFS supervisor. The decision to embargo foods will be based on: hygienic practices, food handling and method of preparation. Collect food samples for laboratory analysis if appropriate. Note: Individuals diagnosed with Hepatitis A are considered infectious two (2) weeks before the onset of symptoms and up to one (1) week after the onset of symptoms.

Questions to be asked include the following:

1. What dates did the food handler work? When (give dates) was he/she symptomatic?
2. Did the food handler prepare food during the time that they were symptomatic or able to transmit disease? What foods were prepared by the food handler? At what points in the food preparation process was the food handler involved?

3. Did the food handler touch any foods with their bare hands? If so, were these foods cooked before serving to other people. Examples may include sandwiches, salads, breads, drinks, desserts, garnishes, etc.

Describe the food worker's hygienic practices. (Obtain this information through interviews of food handler and co-workers.)

1. Does the food handler wash his/her hands after using the bathroom?
2. Does the food handler wash his/her hands as necessary during the day?
3. Does the food handler use single-use gloves? If so, are they used properly?

Note: Please refer to the food handler's information form in **Appendix H**.

FOODS that have any possibility of having become contaminated by an ill/infected food handler must be disposed or embargoed in accordance with Section 3-701.11 of the Rhode Island Food Code (http://www.rules.state.ri.us/rules/released/pdf/DOH/DOH_120_.pdf) and Section 21-31-6 of the Rhode Island Food, Drugs and Cosmetic Act of the General Laws of Rhode Island (http://www.rilin.state.ri.us/Statutes/TITLE21/21-31/21-31-6.HTM).

5.3.3.3 Interview and Educate Other Food Handlers

1. Determine if the food establishment has an employee illness reporting policy/procedure.

2. Interview other food handlers about their health status and, if symptomatic, inform the person in charge to exclude or restrict the ill/infected food handler as warranted, pending medical evaluation. If the person in charge refuses to comply, then an order must be obtained through proper channels from the Director of the Department of Health.

3. A Public Health Nurse from the Office of Communicable Disease will provide information to the food establishment employees about the specific disease of concern. Education will include: symptoms, mode of transmission, and prevention. Copies of the pertinent fact sheet will be given to the employees. Provide employees with pertinent fact sheets. (**Appendix Q**, *CDC Fact Sheets*).

4. Stress the importance of thorough hand washing.

   Proper hand washing procedures:
   a) Wet hands with warm water and apply enough soap to attain a good lather.
   b) Vigorously rub together the surfaces of lathered hands and arms for at least 20 seconds. Pay particular attention to the area between the fingers and under the fingernails. (The use of a nailbrush is required with the first hand washing after using the bathroom and before beginning or returning to work).
   c) Rinse thoroughly under clean running water.
   d) A second hand washing is required after using the bathroom and before beginning or returning to work.
   e) Dry hands.

Note: Soap, drying materials or device, hot/cold running water and a nailbrush must be provided at each hand-washing sink.

5. Stress the importance of employees not working if they are ill.

6. Reinforce the following:
   - Policy of **NO BARE HAND CONTACT** with ready-to-eat foods,
   - Proper use of gloves and utensils when handling ready-to-eat foods,
   - Proper holding temperatures,
   - Proper procedures for rapid cooling, and thorough cooling and reheating of foods.

5.4 Hepatitis A Control Measures

A confirmed case of Hepatitis A in a food handler should be acted upon immediately according to the following procedures:

5.4.1 Determine the period of infectivity (OCD) - an individual is considered infectious 14 days prior to symptoms onset and 7 days after symptoms onset.

5.4.2 Exclude the food worker from the food establishment if the employee is diagnosed with Hepatitis A infection and is still considered infectious.

5.4.3 Inspect the food establishment. OFP personnel will concentrate on hand washing practices and rest room facilities, and will emphasize thorough hand washing and no bare hand contact with ready-to-eat foods.

5.4.4 OCD will obtain a history of the days and shift that the infected employee worked, other places of employment, types of food handled, use of disposable gloves, and hygienic practices of the Hepatitis A positive individual.

5.4.5 OCD personnel will interview other employees for symptoms of Hepatitis A. If symptomatic, they should also be excluded from work and tested for Hepatitis A.

5.4.6 OCD or OFP will make the decision to reinstate excluded employee if:

- The excluded person provides written medical documentation to the person in charge of the food establishment as per Chapter 2, subpart 2-201.13 of the RI Food Code specifying that the person is no longer ill and free of the symptoms of Hepatitis A.
- The person in charge of the food establishment, after receiving medical documentation from the excluded employee, must obtain approval from the Department of Health to reinstate the employee.

5.4.7 Immunize contacts (from food establishment) of ill employee with immune globulin (IG) The Office of Communicable Diseases will coordinate and conduct this intervention.

5.4.8 Assess the likelihood of transmission to food establishment patrons (OCD).

5.4.9 Determine if there was bare hand contact with ready to eat foods (OFP).

5.4.10 Assess hygienic practices of ill worker to determine the potential for transmission of disease (OFP).

5.4.11 Notify the public if applicable, i.e. the Hepatitis A positive individual prepared food less than 2 weeks ago while infectious, he/she prepared ready-to-eat foods with bare hands, and their hand washing or hygienic practices were poor.

5.4.12 Continue surveillance (OCD) – manager of food establishment must monitor employees daily to determine if signs and symptoms are present.

5.4.13 Implement control measures to prevent transmission of hepatitis A

- Frequent hand washing
- No bare hand contact with ready to eat foods

Section 6
Food Testing

Coordination of the collecting and testing of food samples is arranged between the Office of Communicable Diseases, Office of Food Protection, Department of Health Laboratories and the family or the restaurant involved.

6.1 Tests Performed on Food Samples:

The Public Health Microbiology Laboratory performs Foodborne illness testing of suspected foods. This laboratory is capable of testing for the following foodborne organisms: *Salmonella sp., Shigella sp., Staphylococcus aureus, Bacillus cereus, Listeria sp., Clostridium perfringens, Clostridium botulinum, E. coli 0157:H7and Vibrio sp.*

The Public Health Microbiology Laboratory has the capability of identifying *Yersinia* and *Campylobacter sp.*

6.2 Food Sampling Procedures

6.2.1 Protocol for Collection of all Samples for Food Testing

6.2.1.1 Use aseptic sampling techniques if collecting samples for microbiological analysis.

6.2.1.2 Complete the Sample Collection Form

6.2.1.3 Follow the proper chain of custody procedures in order to maintain the integrity of the sample from collection to analysis. This requires sealing the sample at the time of collection, writing in the correct date, time, and condition of sample and obtaining the appropriate signatures as indicated in the Chain of Custody section on the Sample Collection Form whenever the sample changes hands.

6.2.2 Procedure For Handling Samples Resulting From Consumer Complaints

6.2.2.1 For food with suspected criminal implications, such as **tampering**, the consumer should be advised to contact the police department. Food samples suspected of containing blood, other bodily fluids, drugs or poisons fall into this category. The Office of Food Protection (Office) will notify the appropriate police department that the consumer has been advised to contact them. The police will be responsible for the investigation, and the Office will ask that the

police keep them updated as the investigation progresses to make certain that there is no contaminated food in distribution that poses a public health risk.

6.2.2.2 Food samples suspected of containing **blood** or **other bodily fluids**, **drugs** or **poisons** should be directly delivered to Forensic Evidence Receiving at the Department of Health Laboratories (Lab), Room 306. Delivery to Evidence Receiving (HEALTH Labs) also applies to samples being delivered by the police (if contamination is suspected to be of a criminal nature) or by an agent of the Office of Food Protection (if contamination is suspected to be accidental or unintentional).

6.2.2.3 Readily identifiable **foreign objects** such as hair, glass, metal objects (nails, screws, etc), band-aids, cockroaches, or rodents will not be taken to the Lab for analysis. Obtain control food samples of the same lot from a container of commercially processed food. These will be used to determine if there is an isolated or broader public health issue. Control food samples, if collected, will be taken to the lab for analysis. If it is determined that the foreign object(s) that may have been introduced from food prepared on site, inspections of the establishment where the food was prepared will be conducted to determine the source of the foreign object.

6.2.2.4 Samples not accepted by the Office of Food Protection can be referred to outside labs listed in the yellow pages or on the internet/web site. Do not recommend the Food Chemistry Lab as a fee for service lab. Food Chemistry will only handle samples accepted through the Office of Food Protection.

6.2.3 Protocol to Determine if a Sample(s) needs to be accepted from Consumers by the Office of Food Protection.

6.2.3.1 An Environmental Health Food Specialist (EHFS) or his/her supervisor will interview the complainant before the Office of Food Protection can accept any sample. If, after interviewing the complainant, the Environmental Health Food Specialist (EHFS) decides to accept the sample, the following paperwork will need to be completed. **The team supervisor or appointed designee will be responsible for ensuring that all the necessary paper**

work is completed correctly before the sample is taken to the Lab. The necessary paper work includes the following:

1. A **consumer complaint form** (Food-Related Record form or Food-Related Illness Complaint form). See Appendix A. The interviewer must fill out this form accurately and completely. It is imperative that complaint forms be filled out accurately and completely for the lab to make an assessment of the situation. It is the responsibility of the Environmental Health Food Specialist (EHFS) or his/her supervisor to determine the type(s) of testing that needs to be performed on the submitted and accepted food sample(s). For **specific questions** relating to chemical testing contact the Food Chemistry Laboratory for assistance. Please note that if the type(s) of testing required is not specified, the laboratory will not be able to accept the sample.
2. A **Sample Collection form** must be filled out accurately and completely for each sample submitted. To evaluate possible testing choices, see "Guide to Sample Distribution", Appendix J, and "Categorization of Tests by Method and Laboratory", Appendix I..
3. The **Chain of Custody Section** of the **Sample Collection Form**. This section needs to be completed in its entirety.

6.2.3.2 Whenever a sample is transferred from one person to another within the Office of Food Protection, the Chain of Custody section of the Sample Collection form must reflect in writing the date and time of transfer, and the people involved in the transfer. If the sample(s) cannot be taken to the Lab immediately they must be locked in the sample refrigerator located in the Office of Food Protection, The key is available from the CEHFS.

Note: A sample must never be left unattended. The chain of custody for an unattended sample will be considered broken and the sample will no longer be considered a legal sample.

6.2.3.3 Delivery of samples to the DOH Laboratories for analysis:

1. Samples must be delivered directly to the appropriate lab supervisor or designated lab personnel (food chemistry or Public Health microbiology). The person

releasing the sample (Food Protection agent) and the person receiving the sample (Lab personnel) must complete the chain of custody section of the sample collection form. The goldenrod copy is given to the consumer and the white and yellow copy is given to lab personnel. Return the pink copy to the Office of Food Protection.

2. A **copy of the complaint form** must accompany the sample submitted.
3. Submit the **original complaint form and a copy of the sample form** to the Chief Environmental Health Food Specialist (CEHFS). **Note:** Before the CEHFS receives the report, the team supervisor must initial the complaint form in the "Action Taken" section of the form. This will verify that the team supervisor or appointed designee reviewed the report.
4. The team conducting the investigation will maintain a copy of these reports for their files.

6.2.4 Responding To A Consumer Complaint By Phone.

6.2.4.1 EHFS or his/her supervisor must interview the complainant before the Office of Food Protection can accept any sample.

6.2.4.2 If the interviewer decides to accept the sample, the complainant will then be asked to bring the sample to the Office (**Refer to Section 6.2.3 "Protocol to Determine if a Sample(s) needs to be accepted from Consumers by the Office of Food Protection"**). If the interviewer is unsure of accepting the sample, he or she should consult the Chief EHFS or the Chief, Office of Food Protection. If the complainant cannot bring the sample to the Office, then the Chief EHFS will make provisions to collect the sample.

6.2.4.3 If an agent is assigned to collect the sample at the complainant's residence, he/she must complete the sample collection form and follow procedures as indicated in Section 6.2.3, "**Protocol to Determine if a Sample(s) needs to be accepted from Consumers by the Office of Food Protection."**

Note: Ensure that the appropriate Food Protection complaint number is entered on the Collection form (especially when the agent does not have a copy of the complaint report during collection of samples)

6.2.5 Collecting Food Sample(s) At a Food Establishment.

6.2.5.1 The agent may be assigned to collect control food samples upon collection of the suspect food sample. For samples submitted to the Food Chemistry Lab, a minimum of three control samples must be collected.

Control samples should be from a different lot in order to try to represent a normal sample for comparison. If limited information on the complaint is available, the control sample provides comparative results enabling the lab to make an educated assessment of the complaint status. Follow-up samples should be from the same lot to determine if the problem is wide spread among the lot or just an isolated case. If possible, submit the control samples ASAP after receiving the complaint (preferably submitted with the complaint sample), so that the lab can analyze all samples (complaint sample and controls) at the same time for efficiency purposes**.**

6.2.5.2 Agent must bring forms with them when collecting any food samples at the food establishment.

1. The chain of custody section of the sample collection form must be filled out appropriately.
2. A sample form for each sample submitted must be filled out accurately and completely.
3. Samples must be delivered directly to the appropriate lab supervisor or designated lab personnel. The person releasing the samples (Food Protection agent) must complete the chain of custody section of the sample collection form and the person receiving the samples (Lab personnel) must validate by signature, date and time that they have received the samples. The sample form (pink copy) should be submitted to the Chief EHFS. The goldenrod copy is given to the consumer and the white and yellow copy is given to lab personnel. Return the pink copy of the completed sample to the Office of Food Protection.
4. The team conducting the investigation should maintain a copy of these reports for their files.

6.2.6 Food Sample Collection Procedures

6.2.6.1 Samples for microbiological analysis are to be collected following aseptic techniques.

- Wash hands before and after collecting sample(s).
- Wear gloves during sample collection if you have cuts, chapped hands, or dermatitis.
- Use sterile containers.
- Make sure container covers are tight, to prevent leakage.
- Use sterile utensils, tongs, spoons, etc.
- Take the temperature of the food item with a sanitized thermometer prior to placing it in the container.
- Do not handle or touch the inside of the container.
- Try not to use Whirlpack bags or zip-lock type bags for liquids, which can leak and spill easily.
- Whirlpack bags or zip-lock type bags may be used for solid foods, such as dry milk, meat, etc.
- Collect a sufficient amount of sample, at least 4- 6 oz.
- Do not fill sample containers more than three quarters full.
- If possible, when collecting samples (especially liquids) an additional sample should be taken as a temperature control.

6.2.6.2 Labels

- Write clearly with waterproof marker or ballpoint pen.
- Clearly write the name of the product, date, time, sample number and name of inspector on the label.
- Place the sample label on the container or plastic bag.

6.2.6.3 Transportation

- Use dry ice, if available from the Lab, for ice cream or frozen food samples. If dry ice is not available, prompt delivery is key to not compromising frozen samples.
- Place the sample with pre-frozen ice packs in an insulated cooler.

6.2.6.4 Delivery

- Notify the DOH Laboratory (Lab) prior to obtaining samples related to foodborne illness complaints (See *RI Department of Health Phone Numbers*, Section 2 in this manual).

- Contact laboratory personnel after normal working hours and weekends, as needed, regarding samples related to foodborne illness complaints.
- Transport foodborne illness complaint samples to the Lab immediately.
- Upon arrival at the laboratory, bring samples to the receiving area where they will be assigned a lab number.
- Laboratory personnel will take the temperature of the sample(s), upon their receipt by the laboratory.
- Samples will be placed immediately into the lab refrigerator once removed from the insulated cooler.
- Samples must be clearly labeled, identified, and numbered before being placed in the refrigerator.

6.2.7 Sampling Equipment

Stock a sampling kit with the following items and store in the Office of Food Protection at all times:

1. Sterile sample containers
   - Plastic bags, Whirlpack or Zip-loc, 18 oz. Sizes
   - Plastic jars with screw caps, 10 oz. Sizes

2. Sterile and wrapped sample collection implements
   - Spoons, ladles (2 oz. & 8 oz.), scoops, spatulas, swabs, tongs

3. Supporting equipment
   - Waterproof marker, sample forms, thermometer

4. Sterilizing and Sanitizing Agents
   - Alcohol wipes

5. Refrigerants
   - Ice packs, insulated containers

6. Clothing
   - Laboratory coat, hair restraint, disposable plastic gloves

6.2.8 Forms pertinent to conducting environmental investigations:

1. Foodborne Illness Investigation Report (Appendix C).

2. Foodborne Outbreak Investigation Checklist (Appendix B)

Section 7

Rhode Island Department of Health Laboratory: Foodborne Outbreak Investigation

7.1 Role of the State Laboratory in Foodborne Outbreaks

The Division of Health Laboratories for the Department of Health is located at 50 Orms Street, Providence, RI 02904. The State Laboratory is a reference laboratory, where hospitals and other laboratories send specimens or isolates for confirmation and serotyping. In addition to reference laboratory activities, the Laboratory examines implicated food and clinical specimens (in outbreak and non-outbreak situations) to identify the organism or extraneous materials responsible for human illness. The health department, other public agencies and health care providers submit specimens.

The two units within Public Health Microbiology that conduct foodborne illness-related testing are:

- The Clinical Microbiology Lab (human specimen testing)
- The Food Microbiology Lab (often referred to as the Food Lab) and
- The Food Chemistry Lab.

The Environmental Chemistry Section may be involved in situations that involve suspected chemical poisonings or for the testing of naturally occurring toxins. In outbreak situations, the laboratory can coordinate food and clinical specimen submissions with the department to ensure that all specimens (e.g. food handlers, patrons, implicated foods) are handled in a coordinated fashion.

7.2 Types of sample testing available

7.2.1 Feces and Food

The two specimens considered most appropriate for foodborne illness-related testing are **feces** and **food.** (Refer to Section 6.2 for *Food Sampling Policy and Procedure*s.)

7.2.2 Other Specimens

Urine is not a usual specimen for culture although the Public Health Microbiology Lab does receive isolates (usually from hospital labs) from urine specimens of *Salmonella, Shigella* and *E. coli* O157:H7 for identification or serotyping. If the

Health Department should receive notification from the Public Health Microbiology Lab of a positive pathogen from a urine specimen, follow-up should include a stool specimen. If the case is a food handler, the employee still must submit at least one negative stool specimen for clearance to return to work (with the exception of *S. typhi* which is three negative stool specimens).

Blood is not an acceptable specimen when typhoid or botulism is suspected (See Section 6.6 of this manual for more information on botulism testing). Blood tests for hepatitis A are usually performed through the individual's private medical providers, and are not performed at the State Laboratory Institute.

7.3 Clinical Specimen Collection

Laboratory identification of a pathogen in a clinical specimen (blood, feces, etc.) can validate an epidemiological hypothesis and perhaps allow easier implementation of control and preventive measures. Increased confidence will result if a statistical association is combined with isolation of a pathogen from the ill person and the implicated food. This evidence is almost certain to be irrefutable. **Therefore, time is critical when requesting and collecting clinical and food specimens.**

7.3.1 When to collect clinical specimens

- Diagnosis of most foodborne diseases can be made more easily when etiologic agents are isolated from clinical specimens of ill persons. **Encourage ill persons to submit stool specimens while they are still experiencing symptoms or as soon as is practical thereafter. Pathogens or toxins may remain in the intestinal tract for only a short time after illness onset.**

- Collect stool specimens prior to antibiotic treatment. **NOTE**: **A repeat sample may need to be submitted if the patient was on antibiotics when the initial culture was taken. This often happens if the patient is a food handler and needs clearance to return to work.**

NOTE:
- To obtain stool kits, contact (401) 222-5654
- If there are any questions, contact the Public Health Microbiology Laboratory at (401) 222-5654.

7.3.2 How much sample to collect
See Guidelines for Specimen Collection (Section 7.4).

7.3.3 Label each specimen container with:
- Patient name
- Physician name and address
- Date of specimen collection

7.3.4 Complete the accession form that is found inside the container. It must include the following:
- Patient name, address, date of birth, sex
- Date specimen was obtained and the name of the test being requested. This information is needed for epidemiological purposes and is not needed on the accession form.

7.3.5 Packaging and Storage
- Place the vial into sealable side of specimen transport bag, seal bag. Place completed requisition in other side of bag.
- Specimen must be received within three days. Store in refrigerator after collection and until delivery to HEALTH laboratory.

7.4 Guidelines for Specimen Collection

Guidelines for collection and transportation of samples related to foodborne disease outbreaks

Instructions for Collecting Stool Specimens*			
Instructions	**Bacterial**	**Parasitic**	**Viral**
When to collect	During period of active diarrhea (preferably as soon after onset of illness).	Anytime after onset of illness (preferably as soon as possible).	Within 48-72 hours after onset of illness
How much to collect	Fresh stool from 10 ill persons; samples from 10 controls may also be submitted.	A fresh stool sample from 10 ill persons; samples from 10 controls may also be submitted. To enhance detection, 3 stool specimens per patient can be collected >48 hours apart.	As much stool sample from 10 ill persons as possible (a minimum of 10 ml of stool from each); samples may also be obtained from 10 controls.
Method of collection	A bulk stool specimen, unmixed with urine, should be collected in a dry, clean container, e.g. urine specimen cups.	A bulk stool specimen, unmixed with urine, should be collected in a clean container. Place a portion of each stool sample into 10% formalin and polyvinyl alcohol preservative (PVA) at a ratio of one part stool to three parts preservative. Mix well. A portion of the unpreserved stool placed into a leak-proof container may be saved for antigen or PCR testing.	Place fresh stool specimens (liquid preferable), unmixed with urine, in clean, dry containers, e.g., urine specimen cups.
Storage of specimens after collection	Whole stool should be refrigerated and processed within 2 hours after collection. A portion of each stool specimen may be stored frozen at 15°C for antigen or PCR testing.	Store at room temperature, or refrigerate at 4°C. DO NOT FREEZE. Store unpreserved stool specimen frozen at 15°C for antigen or PCR testing.	Immediately refrigerate at 4°C. DO NOT FREEZE. A portion of each stool specimen may be stored frozen at 15°C for antigen or PCR testing.

7.5 Tests Performed on Clinical Specimens During Foodborne Outbreaks

7.5.1 Routine cultures:

- *Campylobacter* species
- *Salmonella* species
- *Shigella* species
- *Vibrio* species
- *Yersinia* species
- *E.coli* O157:H7, also known as Enterohemorrhagic *E. coli* or STEC (toxin testing)

7.5.2 Other cultures and tests performed upon special request (if symptoms of illness are consistent or if symptoms are unknown) include:

- *Clostridium* perfringens
- *Bacillus* cereus
- *Staphylococcus* aureus
- *Clostridium* botulinum

7.5.3 Turnaround Times on Specimens (specimens submitted directly to the Laboratory The following table details the minimum time to complete enteric testing from receipt of sample to test result. (This does not include weekend days.)

Stool Testing Turnaround Times

Species	Positive (minimum hrs.)	Negative (minimum hrs.)
Campylobacter	48	72
Salmonella	48	72
Yersinia	96	48
Shigella	48	72
Vibrio	96	48
E.coli O157:H7	48	48
C. perfringens	72	96
Bacillus cereus	72	48
S. aureus	72	48
Norovirus	72	72

7.6 Botulism Testing

7.6.1 Botulism is considered an agent of bioterrorism.

- Foodborne botulism occurs when a person ingests pre-formed toxin that leads to illness within a few hours to days. Foodborne botulism is a public health emergency because the contaminated food may still be available to other persons besides the patient.

  - Infant botulism occurs in a small number of susceptible infants each year who harbor *C. botulinum* in their intestinal tract.

  Immediately report to the HEALTH Office of Communicable Diseases by telephone at (401) 222-2577 upon receipt of a specimen in the laboratory accompanied by a request for *Clostridium botulinum* testing. If this condition is met outside of normal HEALTH business hours, call the HEALTH after-hours answering service at (401) 272-5952 and ask the operator for the HEALTH physician. Positive results include:

  - Detection of botulinum toxin in serum, stool, or patient's food, **OR**
  - Isolation of *Clostridium botulinum* from stool

Indicate the name of the case, address of the case's residence, gender, date of birth, or if unavailable, age, telephone number, attending physicians name, and race and ethnicity of the case.

7.6.2 Requirements for specimen submission to health

After contacting the HEALTH Office of Communicable Diseases for preauthorization, submit all suspect clinical specimens and/or isolates to HEALTH Laboratories.

7.6.3 Specimen collection, handling, and transport

Refer to the current version of the LRN Level A Protocol for *Clostridium botulinum* for specimen selection and collection guidelines (See Appendix O).

For suspicious isolates, submit the original culture plate on the initial day of isolation. Seal the plates with Parafilm® or other appropriate barrier film. Package and transport the isolate in transport containers supplied by the HEALTH

Bioterrorism Response Laboratory (marked with specific labeling), following standard regulated packaging and transport requirements.

For clinical specimens, follow the same instructions as those described for isolates, with the additional requirement of maintaining refrigerated temperature conditions by surrounding the internal shipping container with blue or wet ice.

For further information contact the Bioterrorism Response Laboratory. See contact listing in Section 1 of this manual.

7.6.4 **See Appendix O** (CDC reference for laboratory testing of *Clostridium botulinum*: or see CDC site at: http://www.bt.cdc.gov/agent/botulism/botulismlabprotocol.pdf)

Section 8

Reporting Results

8.1 Written reports on all positive results are sent to:

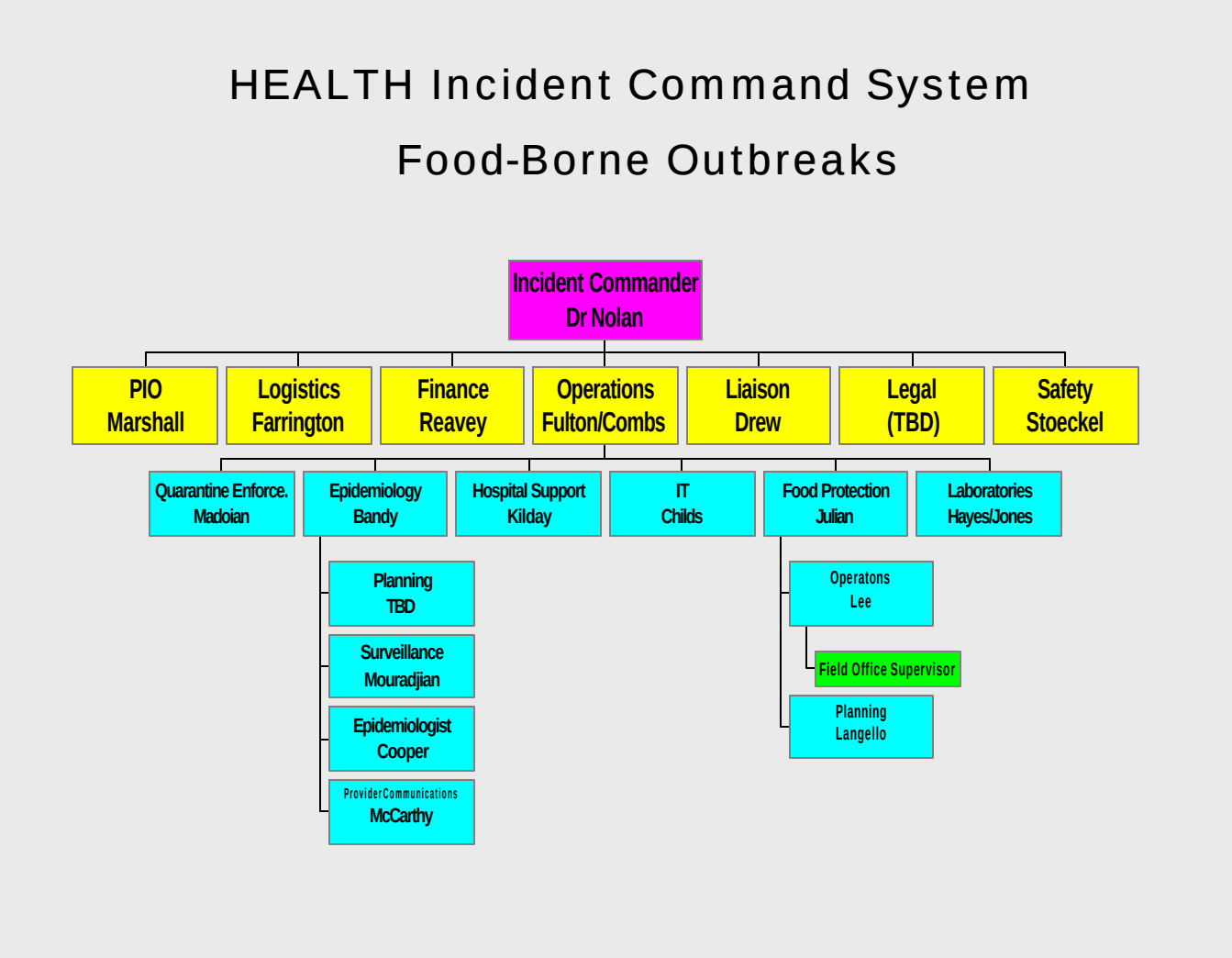
1. The Centers for Disease Control in Atlanta
2. Other submitters as noted on the Accession form (e.g., the patient's physician or a hospital lab)
3. The Office of Communicable Diseases, Rhode Island Department of Health.

8.2 Written reports on all negative results are sent to:

1. Submitter on Accession form.
2. Other submitters as noted on the Enteric Culture Requisition form (e.g., the patient's physician or a Hospital lab).
3. Office of Communicable Diseases, Rhode Island Department of Health.

8.3 Environmental test results (positive and negative) are sent to the OFP and OCD.

Section 9
Incident Command System During a Foodborne Outbreak



NOTE: Full Departmental ICS response would occur only for large outbreaks that outstrip routine office surge capacity

Section 10
Appendices

A. **Food-Related Illness Complaint Record**

B. **Foodborne Outbreak Investigation Checklist**

C. **Foodborne Illness Investigation Report**

D. **Office of Food Protection, Embargo/Disposal Form**

E. **Office of Food Protection, Sample Collection Form**

F. **Food Employee Reporting Agreement (English & Spanish)**

G. **Foodborne Outbreak Kit Inventory**

H. **Food Handler Information Form**

I. **Categorization of Tests by Method and Laboratory**

J. **Guide to Sample Distribution**

K. **RI Department of Health Laboratory: Guide to Clinical Specimen Collection**

L. **RI Department of Health Laboratory: Guide to Environmental Specimen Collection**

M. **Rhode Island Department of Health Office of Food Protection Food Code – 1994**

N. **Press Release Policy**

O. **Level *A* Laboratory Guidelines for Identification of *Clostridium botulinum Toxin***

P. Tables Foodborne Outbreak Disease Table

Q. CDC fact sheets:

1 Amebiasis
2 Botulism
3 Brucellosis
4 Campylobacter
5 Cholera
6 Cryptosporidiiosis
7 Cyclospora cayetanensis
8 E. Coli 0157:H7
9 Giardiasis
10 Listeriosis
11 Norovirus
12 Salmonellosis
13 Shigellosis
14 Trichinellosis
15 Typhoid Fever
16 Vibrio parahemolyticus
17 Vibrio vulnificus
18 Yersinia Enterocolitica

Food-Related Illness Complaint Record

Rhode Island Department of Health
Office of Food Protection
3 Capitol Hill, Rm. 203
Providence, RI 02908
401-222-2750

Complaint # _____ FP # _____ Date: _____ Time: _____

Name: _____ Address: _____

Home Phone: _____

City: _____ State: _____ Work Phone: _____

Age: _____ Gender: M ☐ F ☐ Occupation: _____

Place of Employment: _____

Complaint:		
Time first symptom(s): Date: _____ Hour: _____	End of symptom(s): Date: _____ Hour: _____	Duration of illness:
Number ill:	If event or function, number who ate food:	

Predominant symptoms: (please specify order of symptom occurrence, i.e. 1,2 3, etc.)

☐ Vomiting ☐ Fever _____° F ☐ Skin (itching, flushing, rash)
# of episodes/24 hours: _____

☐ Diarrhea ☐ Nausea ☐ Jaundice
# of episodes/24 hours: _____

☐ Bloody Stool ☐ Abdominal Cramps

Other symptoms:

Did you seek medical attention: ☐ Yes ☐ No
If yes, name of physician:

Address:	Phone:

Hospitalized: ☐ Yes ☐ No
If yes, Name:

Address:	Phone:
Physician's name:	Phone:

Laboratory test conducted: ☐ Yes ☐ No	Type of Specimen:	Organism/Toxin detected:

Potentially Hazardous Foods *(Please specify if the following were consumed in the past 5 days)*		
Food Item	*Location*	*Date & Time*
Raw or undercooked eggs?		
Raw or undercooked meat, shellfish, or fish?		
Unpasteurized milk or juice?		
Home canned goods?		
Fresh produce?		
Soft cheeses made from unpasteurized milk?		

5 Day Food History *(Please list name & location of food establishments where foods were eaten)*			
Name	*Location*	*Food Items*	*Date & Time*
1.			
2.			
3.			
4.			
5.			
6.			

Exposure History Within the Past 6 Weeks	
International travel? Yes ☐ No ☐	If yes, please specify country:
Domestic Travel? Yes ☐ No ☐	If yes, please specify location:
Day Care? Yes ☐ No ☐	If yes, please specify location:
Contact with ill person? Yes ☐ No ☐	Please specify illness if known:
Contact with ill animal? Yes ☐ No ☐ Contact with reptiles? Yes ☐ No ☐	Please specify animal illness if known:
Attend any large functions or events? Yes ☐ No ☐	If yes, please specify location:
Are you aware of other people with similar symptoms?	
Suspect meal and location:	Establishment License #:
Any leftovers? Yes ☐ No ☐	
Additional comments/Action Taken:	
Interviewed by:	Date:

RI Department of Health
Office of Food Protection
Foodborne Outbreak Investigation Checklist

Food Inspector Checklist	*Task*	*Initials*
☐	1. Immediately embargo any suspect leftovers to prevent further illness.	
☐	2. Ensure that there is no bare hand contact with ready-to-eat foods.	
☐	3. Do not allow food to be served without checking and assuring safe temperatures.	
☐	4. Examine the walk-in refrigerator for food in large stockpots, in addition to whole roasts, or other foods more than four inches thick that were cooled. Take temperatures and determine when they were prepared and how they were cooled. Embargo if suspect.	
☐	5. Interview each food worker to determine if they are ill or have been ill within the last two weeks.	
☐	6. If the employee has been sick with a food-related illness within the last 3 days, exclude him or her from food preparation. (Notify Supervisor so that Disease Control can be contacted to obtain a stool culture.)	
☐	7. Obtain the complete menu served to ill group (including beverages, appetizers, dessert, etc.) and fax or call into office.	
☐	8. Obtain detailed food-handling procedures (including date, time & preparer) for each step in preparation of suspect food(s).	
☐	9. Identify ingredients, including weight/volume, and steps involved in the preparation of suspect food(s).	
☐	10. Collect samples for laboratory analysis as needed.	

HEALTHri
Rhode Island Department of Health
Patricia A. Nolan M.D., MPH, Director ● Donald L. Carcieri, Governor

Rhode Island Department of Health
Office of Food Protection
Foodborne Illness Investigation Report

3 CAPITOL HILL, RM. 203
PROVIDENCE, RI 02908
PHONE: (401) 222-2749
FAX: (401) 222-4775

Complaint #								
Establishment Name:	Out		F.P.	Risk Type	Complete	Month	Day	Year
	In				C I			
Address:	Total travel time:		Kind	Find	Action 1	Action 2	Prefix	License number
						D E VC C		
City:	License: Yes ☐ No ☐				Certified Manager: Yes ☐ No ☐			

DATE OF LAST ROUTINE INSPECTION: (ATTACH MOST RECENT INSPECTION) _____

DATE AND TIME OF SUSPECT MEAL: _____

SUSPECT FOOD(S)/INGREDIENT(S): *(PLEASE ENTER UP TO THREE SUSPECT FOODS/INGREDIENTS. FOR ADDITIONAL ENTRIES, PLEASE USE ANOTHER SHEET.)*

1. _____
2. _____
3. _____

I. Product information (if known)	
PRODUCT/BRAND NAME(S):	
CODE/LOT NUMBER(S):	
EXPIRATION DATE(S):	

I. Product information cont…	
SIZE/WEIGHT:	
MANUFACTURER NAME AND ADDRESS	
DISTRIBUTOR NAME AND ADDRESS	

II. Potential sources of employee contamination (If yes, please describe below in comments section)	YES	NO	NA	NOT OBSERVED
A. DIARRHEA OR OTHER GASTROINTESTINAL SYMPTOMS OR ABSENCE FROM WORK PRIOR TO OR DURING THE OUTBREAK?	☐	☐	☐	☐
B. DOES THE ESTABLISHMENT HAVE AN EMPLOYEE ILLNESS POLICY IN PLACE?	☐	☐	☐	☐
C. BARE HAND CONTACT WITH READY-TO-EAT FOODS?	☐	☐	☐	☐
D. USE OF UNCLEAN AND/OR IMPROPERLY SANITIZED EQUIPMENT/UTENSILS?	☐	☐	☐	☐
E. PRESENCE OF SKIN INFECTION(S)?	☐	☐	☐	☐
F. POOR PERSONAL HYGIENE?	☐	☐	☐	☐
ADDITIONAL COMMENTS:				

III. OTHER SOURCES OF CONTAMINATION (IF YES, PLEASE DESCRIBE BELOW IN COMMENTS SECTION)	YES	NO	NA	NOT OBSERVED
A. CROSS-CONTAMINATION OF READY-TO-EAT FOODS WITH RAW INGREDIENTS?	☐	☐	☐	☐
B. FOOD OBTAINED FROM AN UNSAFE SOURCE, I.E. UNAPPROVED OR ADULTERATED?	☐	☐	☐	☐
C. INADEQUATE THAWING OF FOOD?	☐	☐	☐	☐
D. INADEQUATE COOKING OF FOOD?	☐	☐	☐	☐
E. DOES THE ESTABLISHMENT HAVE A WRITTEN CONSUMER ADVISORY?	☐	☐	☐	☐
F. INADEQUATE COOLING OF FOOD?	☐	☐	☐	☐
G. INADEQUATE HOT-HOLDING OF FOOD?	☐	☐	☐	☐
H. INADEQUATE COLD-HOLDING OF FOOD?	☐	☐	☐	☐

ADDITIONAL COMMENTS:

IV. actions Taken

☐ FOOD SAMPLES COLLECTED ☐ FOOD DISPOSED ☐ FOOD EMBARGOED	FOOD PRODUCT : 1. 2. 3.
☐ FOOD EMPLOYEE RESTRICTION OR EXCLUSION ☐ OPERATING PROCEDURE S MODIFIED (PLEASE SPECIFY) ☐ EQUIPMENT REPAIRED	☐ NONE ☐ OTHER (DESCRIBE BELOW)

OFFICE USE ONLY:

Conclusions:

ESTABLISHMENT OWNER/MANAGER _____ SIGNATURE _____

FOOD INSPECTOR _____ SIGNATURE _____

DIVISION OF FOOD PROTECTION & SANITATION
RHODE ISLAND DEPARTMENT OF HEALTH
Providence, Rhode Island 02903

FPS. 569/4
Embargo No. _____
Date _____
Field Office _____

(Check One)

☐ VOLUNTARY DISPOSAL: I, _____ (SIGNATURE) have this day voluntarily destroyed, or caused to be destroyed, the merchandise described below and hereby release the R. I. Dept. of Health, Div. of Food Protection & Sanitation and its members, agents, and representatives from any and all liability. Said merchandise found in my possession was unfit for human consumption, or otherwise unlawful.

☐ EMBARGO: The following items are hereby declared to be "EMBARGOED" under Sec. 21-31-6(a) of the R. I. Food, Drug and Cosmetics Act. It shall be UNLAWFUL FOR ANY PERSON TO REMOVE or DISPOSE or SELL SUCH DETAINED or EMBARGOED MERCHANDISE UNTIL PERMISSION FOR REMOVAL or DISPOSAL IS GIVEN BY A DULY AUTHORIZED AGENT of the R. I. Dept.of Health, or the COURT.

I, _____ (SIGNATURE) agree that the following inventory is true & accurate and understand the conditions of the preceeding paragraph.

☐ CONDEMNATION: DISPOSAL and or DESTRUCTION: The following items are hereby declared to be a "NUISANCE" under Sec. 21-31-6(d) of the R. I. Food, Drug and Cosmetics Act and are therefore CONDEMNED.

☐ EMBARGO RELEASE: The products listed on EMBARGO No. _____ Dated _____ are hereby released from detention.

☐ RECEIPT FOR DISPOSAL: I hereby acknowledge the receipt of the goods listed below for disposal. Method & Place of Destruction and/or Disposal _____

_____

Received by _____ Date _____

	QUANTITY	INVENTORY DESCRIPTION CODES	Reason for Action	Size	Wgt	Value
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						

☐ (Check) **SUPPLEMENTARY INVENTORY SHEETS ATTACHED**

Firm Name _____ Address _____

Type of Business _____ Representative & Title _____

Signature

INSTRUCTIONS Record only one action per form

Agent _____ DIV. of FOOD PROTECTION & SANITATION

ORIGINAL - ESTABLISHMENT COPY
DUPLICATE - DIVISION COPY

Client/Program: FOO

Apply Sample ID Label Here

Rhode Island Department of Health – Office of Food Protection
Room 203, Cannon Bldg., 3 Capitol Hill, Providence, RI 02908

Sample Collection Form

Item:	Brand name:
Collected at:	Establishment License Number:
Address:	City:
Manufacturer Name & Address:	
Collected by:	Collection Date/Time:

Results to: FOO ☐ SHL ☐

Condition	Sealed	Product Code/Date of Manufacture	Manufactured on Premises	Sample Code	Establishment Temp. º F
Hot Cold Frozen Other	☐ Yes ☐ No		Yes ☐ No ☐		

Temp. Received º F	Exp. Date	From Lot of	Size	Date of Shipment

Consumer Complaint:	Complaint #:

Name & location of store where purchased:	Establishment License #	Original Container	Date Purchased
		☐ Yes ☐ No	

How stored	*Import Product*	*Date*	*Interviewed by*	*Time*	*Product used*	*Amount Remaining*
Frozen Ambient Cold	☐ Yes ☐ No				☐ Yes ☐ No	

Chain of Custody – Date, Time or Transaction of Complaint from Field to Lab, etc. (please sign then print your name)		***Date***	***Time***	***How stored***
1. From (sign):	**To (sign):**			
Print	Print			
2. From (sign):	**To (sign):**			
Print	Print			
3. From (sign):	**To (sign):**			
Print	Print			

Food Chemistry Tests* (please check)

☐FC01 Acetic Acid	☐FC08 Cereal Qual	☐FC16 Histamine	☐FC 24 Moisture	☐FC 33 Potassium	☐FC38 Sugars	☐FC69 Vitamin A
☐FC03 Added H_2O	☐FC10 Domoic Acid (ASP)	☐FC17 Lactic Acid	☐FC25 Mold/Yeast	☐FC34 Protein	☐FC39 Sulfite	☐FC70 Vitamin D
☐FC04 Additives	☐FC11 Ethanol	☐FC19 Lactose/ Galactose	☐FC27 Non-Fat Dairy Milk	☐FC32 Phytoplankton	☐FC40 Thiobarbituric Acid	☐FC45 Water Activity
☐FC05 Allergens	☐FC12 Fat	☐FC20 L-Glutamic Acid	☐FC28 Nitrite	☐FC35 PSP	☐FC41 Titratable Acidity	☐FC46 Wt./Vol.
☐FC02 Aflatoxin	☐FC13 Free Fatty Acid	☐FC21 Magnesium	☐FC29 Organoleptic	☐FC36 Sodium	☐FC42 Trimethyl-amine	
☐FC06 Brix	☐FC14 Filth	☐FC22 Meat Species ID	☐FC30 pH	☐FC26 Sodium Chloride	☐FC43 Total Solids-RI	
☐FC07 Calcium	☐FC15 Heavy Metals	☐FC23 Mercury	☐FC31 Phosphorous	☐FC37 Soy Flour	☐FC44 Total Volatile Bases	

Food Micro Tests*

☐SM16 Bacillus cereus	☐SM0 8 Listeria
☐SM Campylobacter	☐SM32 Non-Coag Staph
☐SM15 Coag. Staph	☐SM18 Salmonella
☐SM20 Clostridium Botulinum	☐SM24 Standard Plate Count
☐SM19 Clostridium perfringens	☐SM12 Total Coliform/MPN
☐SM14 Fecal/MPN	☐SM Yersinia

Other:

06/11/04

* Samples will be maintained for thirty (30) days

RHODE ISLAND DEPARTMENT OF HEALTH
OFFICE OF FOOD PROTECTION

FOOD EMPLOYEE REPORTING AGREEMENT

Preventing Transmission of Diseases through Food by Infected Food Employees with Emphasis on illness due to Salmonella typhi, Shigella spp., Escherichia coli 0157:H7, and Hepatitis A Virus

The purpose of this agreement is to ensure that Food Employees notify the Person in Charge when they experience any of the conditions listed so that the Person in Charge can take appropriate steps to preclude the transmission of foodborne illness.

I AGREE TO REPORT TO THE PERSON IN CHARGE:

FUTURE SYMPTOMS and PUSTULAR LESIONS:

1. Abdominal Cramps
2. Diarrhea
3. Fever
4. Prolonged loss of appetite (more than 3 days)
5. Jaundice
6. Vomiting
7. Pustular lesions:
   -Pustular lesion on the hand, wrist, or an exposed body part (such as boils and infected wounds, however small)

FUTURE MEDICAL DIAGNOSIS:

Whenever diagnosed as being ill with typhoid fever (Salmonella typhi), shigellosis (Shigella ssp.), Escherichia coli 0157:H7 infection (E. coli 0157:H7), or hepatitis A (hepatitis A virus)

FUTURE HIGH-RISK CONDITIONS:

1. Exposure to or suspicion of causing any confirmed outbreak of typhoid fever, shigellosis, E. coli 0157:H7 infection, or hepatitis A.
2. A household member diagnosed with typhoid fever, shigellosis, illness due to E. coli 0157:H7, or hepatitis A.
3. A household member attending or working in a setting experiencing a confirmed outbreak of typhoid fever, shigellosis, E. coli 0157:H7 infection, or heaptitis A.
4. Travel outside the United States within the last 50 days.

I have read (or had explained to me) and understand the requirements concerning my responsibilities under the Food Code and this agreement to comply with:

1. Reporting requirements specified above involving symptoms, diagnoses, and high-risk conditions specified;
2. Work restrictions or exclusions that are imposed upon me; and
3. Good hygienic practices.

I understand that failure to comply with the terms of this agreement could lead to action by the food establishment or the food regulatory authority that may jeopardize my employment and may involve legal action against me.

Applicant or Food Employee Name (PLEASE PRINT)

Signature of Applicant or Food Employee **Date**

Signature of Permit Holder's Representative **Date**

Note: This form was developed by the Food and Drug Administration and is available in the annex of the 1993 Food Code.

RHODE ISLAND DEPARTMENT OF HEALTH
OFFICE OF FOOD PROTECTION

ACUERDO EN REPORTAR PARA EMPLEADOS DE ALIMENTOS

PARA PREVENCION DE TRANSMISION DE ENFERMEDADES MEDIANTE ALIMENTOS
POR EMPLEADOS CON: Salmonella Typhy, Shigella ssp., Escherichia coli 0157:H, y Hepatitis A virus

El proposito de este acuerdo es asegurar que empleados de alimentos notifiquen a la persona encargada cuando ellos experimentan algunas de las condiciones listadas para asi permitir que la persona encargada pueda tomar los pasos apropiados para impedir la transmision de un brote de enfermedad causada por alimentos.

YO ESTOY DE ACUERDO EN REPORTAR A LA PERSONA ENCARGADA:

SINTOMAS FUTUROS Y LESIONES CONTENIENDO PUS:

1. Dolores estomacales
2. Diarrea
3. Fiebre
4. Perdida de apetito (mas de 3 dias)
5. Ictericia
6. Vomitos
7. Lesiones conteniendo Pus
   -Lesiones conteniendo Pus en las manos, munecas, o en partes expuestas del cuerpo (Tal como una ampolla o herida infectada que esta abierta o drenando, no importa el tamano)

DIAGNOSTICO MEDICO FUTURO:

Siempre que un empleado de alimento es diagnosticado con una enfermedad debido a (Salmonella typhy), shigellosis (Shigella spp.), Escherichia coli 0157:H7 (E. coli 0157:H7), o Hepatitis A (Hepatitis A virus)

CONDICIONES FUTURAS DE ALTO RIESGO:

1. Vive en la misma residencia con una persona quien a atendido o trabajado en un excenario donde hay un brote de enfermedad confirmada causada por Salmonella typhy, Shigella spp., E. coli 0157:H7 o infeccion con el virus de Hepatitis A.
2. Vive en la misma residencia con una persona que ha sido diagnosticada con una enfermedad causada por Salmonella typhy, Shigella spp., E. coli 015:H7 o Hepatitis A.
3. Es sospechoso de causar o esta expuesto a un brote de enfermedad confirmado causado por Salmonella typhi, Shigella spp., E. coli 0157:H7 o Hepatitis A.
4. Ha viajado fuera del pais dentro de los ultimos 50 dias.

Yo he leido (o me ha sido explicado) y entiendo los requirimientos que conciernen mi responsabilidad debajo del Food code y este acuerdo para conformarme con:

1. Reportar los requerimientos especificados anteriormente, envolviendo sintomas, diagnostico y condiciones de alto riesgo especificados;
2. Restricciones de trabajo o exclusiones que seran impuestas; y
3. Buena practica de higiene.

Yo entiendo que falta de cumplir las condiciones de este acuerdo puede conducir al departamento de comida o la autoridad de regulatoria a tomar medidas que puede poner en peligro mi trabajo y me puedo ver involucrado en asunto legales.

Nombre del Aplicante (ESCRIBIR CON LETRA DE MOLDE)

Firma del Aplicante **Date**

Firma del Dueno o Representante **Date**

Note: Este formulario fue desarrollado por Food and Drug Administration y esta disponible en el anexo del 1993 Food Code.

Rhode Island Department of Health (HEALTH) Web Site: www.HEALTH.ri.gov
Office of Food Protection
Three Capitol Hill, Providence, RI 02908-5097

Foodborne Outbreak Kit Inventory *					
Item	***Date:***	***Date:***	***Date:***	***Date:***	***Date:***
	Check & Initial	***Check & Initial***	***Check & Initial***	***Check & Initial***	***Check & Initial***
(1) Digital Camera (obtain from Chief EHFS prior to responding to outbreak)	☐	☐	☐	☐	☐
(2) Foodborne Outbreak Investigation Checklist	☐	☐	☐	☐	☐
(2) Foodborne Illness Investigation report	☐	☐	☐	☐	☐
(3) Sample Collection Form	☐	☐	☐	☐	☐
(5) 10 oz. Sterile food sample container	☐	☐	☐	☐	☐
(4) 18 oz. Whirl-Pak bag	☐	☐	☐	☐	☐
(4) Zip Loc Bag 13 x 18 in. (4 ml thick)	☐	☐	☐	☐	☐
(3) Sterile Spoon (1 Tablespoon.)	☐	☐	☐	☐	☐
(1) Sterile Scoop 4 oz.	☐	☐	☐	☐	☐
(3) Sterile Spatula	☐	☐	☐	☐	☐
(1) 60 ml/2 oz. stainless steel sterile ladle	☐	☐	☐	☐	☐
(1) 250 ml/8 oz. stainless steel sterile ladle	☐	☐	☐	☐	☐
(5) Sterile cotton-tipped swabs	☐	☐	☐	☐	☐
(1) Sterile stainless steel tong	☐	☐	☐	☐	☐
Embargo Stickers	☐	☐	☐	☐	☐
Alcohol Preps	☐	☐	☐	☐	☐
Medium Vinyl Gloves	☐	☐	☐	☐	☐
Large Vinyl Gloves	☐	☐	☐	☐	☐

* Please ensure that kit is complete. If items are out of stock or require sterilization, please notify the Food Security Coordinator. (Autoclaved utensils good for one year.)

ESTABLISHMENT:_____

FOOD HANDLER INFORMATION FORM

NAME	PHONE (WORK)	PHONE (HOME)
	( ) _____-_____	( ) _____-_____

ADDRESS	CITY	STATE	SEX:
			Male Female

JOB TITLE:	WHAT DOES THE EMPLOYEE DO (DEFINE DUTIES)?

Clinical Information

Was the foodhandler sick during the past two weeks? ❒ Y ❒ N (*If no skip to WORK HISTORY)*

IF YES, WHAT WERE THE SYMPTOMS OF ILLNESS?

Diarrhea	Abdominal Cramps	Headache	Loss of Appetite
Vomiting		Muscle Aches	Fatigue
Nausea	Fever	Chills	Dizziness
	Bloody Stool		Burning Sensation in Mouth

Other Symptoms	Symptom onset date	Duration of symptoms
_____	_____/_____/_____	_____ days or _____ hours

DID THE FOODHANDLER SEEK MEDICAL CARE? ❒ Y ❒ N (*If no skip to WORK HISTORY)*

PHYSICIANS NAME	PHONE NUMBER
_____	( ) _____ - _____

ANY SPECIMENS OBTAINED? Y N	TYPE OF SPECIMEN: Stool Blood Other:_____
DATE OF SPECIMEN COLLECTION _____/_____/_____	LABORATORY _____

WAS THE CASE HOSPITALIZED? Y N	NAME OF HOSPITAL: _____	HOSPITAL CHART NO. _____

Work History

- ✓ Did the food handler prepare/serve/or handle foods, assist others in eating, or give oral medications? ❒ Y ❒ N
- ✓ What are the specific dates the food handler worked in the last two weeks?

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY

- ✓ In the past two weeks, did the foodhandler miss any work? ❒ Y ❒ N
  If yes, when:
  _____
- ✓ In the past two weeks, did the foodhandler work while experiencing loose stools? ❒ Y ❒ N
  If yes, when:
  _____
- ✓ In the past two weeks, were any household contacts ill? ❒ Y ❒ N
  If yes, when:
  _____
- ✓ In the past two weeks, did the foodhandler travel out of state/foreign? ❒ Y ❒ N
  If yes, where:
  _____

Duties And Responsibilities

✓ Did the foodhandler prepare/handle/serve, any foods that would not be cooked before being eaten?
❒ Y ❒ N
If yes, please list all foods prepared/handled/served (e.g. salads, deserts, sandwiches, beverages, ice):

_____ _____ _____ _____

_____ _____ _____ _____

_____ _____ _____ _____

✓ Does the foodhandler wash his/her hands every time after using the bathroom? ❒ Y ❒ N

✓ Does the foodhandler wash his/her hands throughout the day? ❒ Y ❒ N

✓ Are there times when the foodhandler has bare hand contact with ready-to-eat foods? ❒ Y ❒N
If yes, when:

_____

✓ Are there times when the foodhandler does not wear protective gloves? ❒ Y ❒ N
If yes, when:

_____

✓ Are there times when the foodhandler does not use serving utensils? ❒ Y ❒ N
If yes, when:

_____

✓ Does the foodhandler work at any other establishment (daycare, food service or healthcare)? ❒ Y ❒ N
If yes, please provide:
Facility name: _____ Phone: ( ) _____-_____

Address: _____City: _____State: _____

Person notified: _____ Title: _____Date:_____/_____/____

Specific Dates worked at other establishment in the last two weeks:

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY

Notes:

Will submit a stool specimen for surveillance purposes (not diagnostic) Y N

Person completing the form: _____Date/Time: _____

Rhode Island Department of Health (HEALTH)
Office of Food Protection
Three Capitol Hill, Providence, RI 02908-5097
Web Site: www.HEALTH.ri.gov

Categorization of Tests by Method and Laboratory

RI Department of Health (HEALTH)
Division of Laboratories

Categorization of Tests by Method and Laboratory		
Category	**Method**	**Laboratory**
Drugs	GC-MS, UV-VIS, Wet Chem	Drug and/or Human Tox
Poisons	Screening Tests, Kits	Human Tox, Food Chem
Solvents	GC Purge & Trap, GC-MS, LC, GC	Organics
Pesticides	GC, LC	Organics
Metals	AA, ICP, GFAA	Inorganics, EL
Additives	LC, UV, Scan, IR (solids), Wet Chem	Food Chem, Drug Lab
Labeling	LC, Wet Chem, ICP, AA, GFAA	Food Chem, Inorganics
Filth	Chemical and Microscopy	Food Chem
Foodborne Illness	Micro and Chemical	Micro, Food Chem, Organics, Inorganics, Drug and/or Human Tox
Decomposition	Chemical and Micro	Food Chem and Micro
Toxic Micro Agents	Specialized	Bioterrorism Unit
Food Allergens	Wet Chem and Kits	Food Chem

Rhode Island Department of Health (HEALTH) Web Site: www.HEALTH.ri.gov
Office of Food Protection
Three Capitol Hill, Providence, RI 02908-5097

Guide to Sample Distribution

*** Proper information regarding complaint and proper chain of custody must be submitted with complaint form. Targeted questions will help the lab focus on necessary testing. Vague statements such as "test for chemicals" and "made me sick" are not acceptable.**

Descriptors	**Possible Test Categories**
Chemical taste/odor	Metals, additives, pesticides, drugs, micro by-products
Solvent taste/odor	Volatile organics, micro by-products
Sweet, sour, bitter, salty, fruity, pungent	Decomp, labeling, additives, micro by-product
Allergic reaction and/or immediate illness	Food allergens, drugs, metals, poisons
Illness not immediate	Micro, drugs, metals, poisons
Foul odors/spoilage	Decomp, micro
Burning sensation	Acid or base (pH), inorganics (anions or cations to define acid or base)
Foreign object, insect, or rodent	Filth, metals on solid, metal-like objects

Appendix K

RI Department of Health Laboratory: Guide to Clinical Specimen Collection						
Organism/Disease	Specimen Collection Media	Specimen Volume Required	Method of Collection	Specimen Transport	Specimen Storage	Turn around times pos/neg
BACTERIA						
Bacillus cereus *Campylobacter* *Clostridium perfringens* *E. coli O157:H7* Salmonellosis Shigellosis *Staphylococcus aureus* Typhoid Fever *(Salmonella typhi)* *Vibrio cholera* *Vibrio parahemolyticus* *Vibrio vulnificus* *Yersinia enterocolitica*	Enteric Pathogen Transport or Cary Blair	Transfer stool samples about the size of a walnut (continue filling the vial until the liquid level reaches the red line)	Transfer small samples (of stool) from areas that appear bloody, slimy, or watery. If specimen is firm, take sample from both ends and the middle. Continue adding specimen until the liquid reaches the red fill line.	Specimen must be received within three days. Place the vial into sealable side of specimen transport bag, seal bag. Package and ship all specimens according to Dept. of Transportation regulations.	Store in refrigerator after collection and until delivery to HEALTH laboratories	Bacteria Turn around times 72 hours for positive results and 72 hours for negative results
PARASITES						
Amebiasis Cryptosporididosis *Cyclospora* cayetanensis Giardiasis	O + P kit 1 container SAF and 1 container Empty vial	Transfer stool samples about the size of a walnut (continue filling the vial until the liquid level reaches the red line)	A series of three specimens preferably collected every other day is needed for an adequate examination. Transfer small samples (of stool) from areas that appear bloody, slimy, or watery. If specimen is firm, take sample from both ends and the middle Continue adding specimen until the liquid reaches the red fill line.	Transport as soon as possible. Place both vials into sealable side of specimen transport bag, seal bag. Package and ship all specimens according to Dept. of Transportation regulations.	Store in refrigerator after collection and until delivery to HEALTH laboratories	Parasite Turn around times 72 hours for positive results and 72 hours for negative results
VIRUSES						
Norovirus	Clean catch container	2 mls of specimen	Transfer small samples (of stool) from areas that appear bloody, slimy, or watery. If specimen is firm, take sample from both ends and the middle	Transport as soon as possible.	Store at 4C until delivered to laboratory Do not freeze specimen	Viral Turn around times 72 hours for pos+neg

Appendix L

RI Department of Health Laboratory: Guide to Environmental Specimen Collection

Organism Disease	Specimen Volume Required	Method of Collection	Specimen Transport	Specimen Storage
Bacillus cereus	50g. If quantity to be examined is large, take 50g samples from different parts)	aseptic technique	Transport promptly without freezing if possible. If not, pack in containers below 6°C	Store for 36 hrs max. Store frozen samples at -20°C. Refrigerate unfrozen perishables at 0-4°C. Non-perishables can be kept at room temp.
Clostridium botulinum	25g minimum	aseptic technique	aseptic container	Refrigerate. Unopened canned foods can be kept at room temp.
Clostridium perfringens	25g minimum	aseptic technique 150ml container	If sample needs to be shipped add 25ml buffered glycerin-salt. sol'n. Keep frozen at -70 to -90°C with dry ice.	Store at 10°C for a maximum of 8 hrs.
Campylobacter species	25g except 50g milk/cheese/ fruit/vegetable, 50-100g lobster tail/crab claw, 12 shellfish, or 2-4L water	aseptic technique	aseptic container	Organism can survive 1-3 weeks at refrigeration temp. Sample must be analyzed as soon as the package is opened and exposed to oxygen.
E. coli O157:H7	50g minimum or 12 shellfish (at least 200g)	aseptic technique	aseptic container or original unopened container if possible	Analyze sample promptly. Do not freeze. Refrigerate if necessary. Keep above 6°C.
Listeria species	25g minimum	aseptic technique	Keep refrigerated at 4°C in an antiseptic container.	Refrigerate at 4°C. If sample is frozen, keep frozen.
Salmonella species	25g minimum	aseptic technique	aseptic container	Refrigerate at 4°C. If sample is frozen, keep frozen.
Shigella species	25g minimum	aseptic technique	aseptic container	Store for 36 hrs max. Store frozen samples at -20°C. Refrigerate unfrozen perishables at 0-4°C. Non-perishables can be kept at room temp.
Staphylococcus aureus	25g minimum	aseptic technique	aseptic container	Store for 36 hrs max. Store frozen samples at -20°C. Refrigerate unfrozen perishables at 0-4°C. Non-perishables can be kept at room temp.
Vibrio species	25g minimum or oysters- 50g minimum	aseptic technique	aseptic container	Store for 36 hrs max. Store frozen samples at -20°C. Refrigerate unfrozen perishables at 0-4°C. Non-perishables can be kept at room temp.
Yersinia	25g minimum	aseptic technique	aseptic container	Analyze sample promptly or refrigerate at 4°C. Freezing not recommended.

*Test TAT for pos and neg results is approx 72 hrs.

Appendix M

RHODE ISLAND DEPARTMENT OF HEALTH
OFFICE OF FOOD PROTECTION
FOOD CODE - 1994
(Chapters 2-2 & 8-5)

CHAPTER 2:

2-2 EMPLOYEE HEALTH

Subpart
2-201 Disease or Medical Condition

2-201.11 **Responsibility of the Person in Charge to Require Reporting by Food Employees and Applicants.***

The permit holder shall require food employees and food employee applicants to report to the person in charge, information about their health and activities as they relate to diseases that are transmissible through food and active cases of tuberculosis and measles. A food employee or applicant shall report the information in a manner that allows the person in charge to prevent the likelihood of food-borne disease transmission, including the date of onset of jaundice or of an illness specified in this section, if the food employee or applicant:

(a) Is diagnosed with, or had a past, illness due to:
  (1) *Salmonella typhi*,
  (2) *Shigella* spp.,
  (3) *Escherichia coli* 0157:H7, or
  (4) Hepatitis A virus infection;

(b) Has a symptom caused by illness, infection, or other source that is:

  (1) Associated with an acute gastrointestinal illness such as:

    (a) Abdominal cramps or discomfort,
    (b) Diarrhea,
    (c) Fever,
    (d) Loss of appetite for 3 or more consecutive days,
    (e) Vomiting, or
    (f) Jaundice, or

  (2) A pustular lesion such as a boil or infected wound that is open or draining and is:
    (a) On the hands, wrists, or exposed portions of the arms, or

(b) On other parts of the body, unless the lesion is covered by a dry, durable, tight-fitting bandage;
(c) Meets one or more of the following high-risk conditions:

(1) Is suspected of causing, or being exposed to, a confirmed disease outbreak caused by ***S. typhi, Shigella*** spp., ***E. coli*** 0157:H7, or hepatitis A virus illness including an outbreak at an event such as a family meal, church supper, or ethnic festival because the food employee or applicant:

(a) Prepared food implicated in the outbreak,
(b) Consumed food implicated in the outbreak, or
(c) Consumed food at the event prepared by a person who is infected or ill with the infectious agent that caused the outbreak or who is suspected of being a carrier of the infectious agent, or

(2) Lives in the same household as a person, who is diagnosed with a disease caused by ***S. typhi, Shigella*** spp., ***E. coli*** 0157:H7, or hepatitis A virus infection,
(3) Lives in the same household as a person who attends or works in a setting where there is a confirmed disease outbreak caused by ***S. typhi, Shigella*** spp., ***E. coli*** 0157:H7, or hepatitis A virus infection,
(4) Traveled out of the country within the last 50 calendar days.

2-201.12 **Exclusions and Restrictions.***

The person in charge shall:

(A) Exclude a food employee from a food establishment if the food employee is diagnosed with ***S. typhi, Shigella*** spp., ***E. coli*** 0157:H7, or hepatitis A virus infection;

(B) Except as specified under (C) of this section, restrict a food employee from working with exposed food; clean equipment, utensils, and linens; and unwrapped single service and single-use articles, in a food establishment if the food employee is:

(1) Suffering from a symptom specified in 2-201.11(B), or
(2) Is not experiencing a symptom of acute gastroenteritis specified in Subparagraph 2-201.11 (B)(1) but has a stool that yields a specimen culture that is positive for ***Salmonella typhi***;

(C) If the population served is a highly susceptible population, exclude a food employee or an application who:

(1) Is experiencing a symptom of acute gastrointestinal illness specified in Subparagraph 2-201.11(B)(1) and meets a high-risk condition specified in Subparagraphs 2-201.11(C)(1)-(4),

(2) Is not experiencing a symptom of acute gastroenteritis specified in Subparagraph 2-201.11(B)(1) but has a stool that yields a specimen culture that is positive for ***S. typhi, Shigella*** spp., or ***Escherichia coli*** 0157:H7,

(3) Had a past illness from ***S. typhi*** within the last 3 months, or

(4) Had a past illness from ***Shigella*** spp., or ***E. coli*** 0157:H7 within the last month; and

(D) For a food employee or an applicant who is jaundiced:

(1) If the onset of jaundice occurred more than 7 calendar days before:
   (a) Exclude the food employee or applicant from a food establishment that serves a highly susceptible population, or
   (b) Restrict the food employee or applicant from activities specified I 2-201.12(B), if the food establishment does not serve a highly susceptible population.

2-201.13 **Removal of exclusions and Restrictions**

(A) The person in charge may remove an exclusion due to ***S. typhi, Shigella*** spp., ***E. coli*** 0157:H7, hepatitis A virus infection if the person in charge obtains approval from the Department of Health and if the person excluded (as specified in 2-201.12(A)) provides to the person in charge written medical documentation from a physician licensed to practice medicine that specifies that the excluded person:

(1) May work in an unrestricted capacity in a food establishment, including an establishment that serves a highly susceptible population, because the person is free of:
   (a) The infectious agent of concern as specified in 8-501.40, or
   (b) Symptoms, if hepatitis A is the infectious agent of concern; or

(2) May only work in an unrestricted capacity in a food establishment that does not serve a highly susceptible population because the person:
   (a) Is free of the symptoms specified in Subparagraphs 2-201.11(B)(1)(a)-(f), and
   (b) Has a stool that yields a specimen culture that is positive for ***Shigella*** spp., or ***E. coli*** 0157:H7.

(B) The person in charge may remove a restriction specified in:

(1) Subparagraph 2-201.12(B)(1) if the restricted person:

(a) Is free of the symptoms specified in 2-201.11(B) and no food-borne illness occurs that may have been caused by the restricted person,

(b) Is suspected of causing food-borne illness but:

(i) Is free of the symptoms specified in 2-201.11(B), and

(ii) Provides written medical documentation from a physician licensed to practice medicine stating that the restricted person is free of the infectious agent that is suspected of causing the person's symptoms or causing food-borne illness, as specified in 8-501.40, or

(c) Provides written medical documentation from a physician licensed to practice medicine stating that the symptoms experienced result from a chronic noninfectious condition such as ulcerative colitis or irritable bowel syndrome; or

(2) Subparagraph 2-201.12(B)(2) if the restricted person provides written medical documentation according to the criteria specified in 8-501.40 that indicates the stools are free of ***Salmonella typhi*.**

(C) The person in charge may remove an exclusion specified under 2-201.12(C) if the excluded person provides written medical documentation from a physician licensed to practice medicine that the person is free of ***S. typhi, Shigella*** spp., ***E. coli*** 0157:H7, or hepatitis A virus infection, whichever is the infectious agent of concern, as specified in 8-501.40.

(D) The person in charge may remove an exclusion specified in Subparagraph 2-201.12(D)(1) and Subparagraph 2-201.12(D)(2)(a) and a restriction specified in Subparagraph 2-201.12(D)(2)(b) if:

(1) No food-borne illness occurs that may have been caused by the excluded or restricted person and the person:

(a) Provides written medical documentation from a physician licensed to practice medicine stating that the person is free of hepatitis A virus as specified in 8-501.40(D), or

(b) Is no longer jaundiced; or

(2) The excluded or restricted person is suspected of causing food-borne illness and complies with Subparagraphs (D)(1)(a) and (b) of this section.

2-201.14 Responsibility of a Food Employee or an Applicant to Report to the Person in Charge.*

A food employee or a person who applies for a job as a food employee shall:

(A) In a manner specified in 2-201.11, report to the person in charge the information specified in 2-201.11(A)-(C); and
(B) Comply with exclusions and restrictions that are specified in 2-201.12(A)-(D).

2-201.15 **Reporting by the Person in Charge.***

The person in charge shall notify the regulatory authority of a food employee or a person who applies for a job as a food employee who is diagnosed with, or is suspected of having an illness due to, ***Salmonella typhi, Shigella*** spp., ***Escherichia coli*** 0157:H7, or hepatitis A virus infection.

CHAPTER 8:

8-5 PREVENTION OF FOOD-BORNE DISEASE TRANSMISSION BY EMPLOYEES

Subpart 8-501 Investigation and Control

8-501.10 Obtaining Information: Personal History of Illness, Medical Examination, and Specimen Analysis.

The regulatory authority shall act when it has reasonable cause to believe that a food employee has possibly transmitted disease; may be infected with a disease in a communicable form that is transmissible through food; may be a carrier of infectious agents that cause a disease that is transmissible through food; or is affected with a boil, an infected wound, or acute respiratory infection, by:

(A) Securing a confidential medical history of the employee suspected of transmitting disease or making other investigations as deemed appropriate; and

(B) Requiring appropriate medical examinations, including collection of specimens for laboratory analysis, of a suspected employee and other employees.

8-501.20 Restriction or Exclusion of Food Employees, or Summary Suspension of Permit.

Based on the findings of an investigation related to an employee who is suspected of being infected or diseased, the regulatory authority may issue an order to the suspected employee or permit holder instituting one or more of the following control measures:

(A) Restricting the employee's services to specific areas and tasks in a food establishment that present no risk of transmitting the disease;

(B) Excluding the employee from a food establishment; or

(C) Closing the food establishment by summary suspending a permit to operate in accordance with law.

8-501.30 Restriction or Exclusion Order: Warning or Hearing Not Required, Information Required in Order.

Based on the findings of the investigation as specified in 8-501.10 and to control disease transmission, the regulatory authority may issue an order of restriction or exclusion to a suspected employee or the permit holder without prior warning, notice of a hearing, or a hearing if the order:

(A) States the reasons for the restriction or exclusion that is ordered;

(B) States the evidence that the employee or permit holder shall provide in order to demonstrate that the reasons for the restriction or exclusion are eliminated;

(C) States that the suspected employee or the permit holder may request an appeal hearing by submitting a timely request as provided under law; and

(D) Provides the name and address of the regulatory authority representative to whom a request for an appeal hearing may be made.

8-501.40 Release of Employee from Restriction or Exclusion.

The regulatory authority shall release an employee from restriction or exclusion according to law and the following conditions:

(A) An employee who was infected with ***Salmonella typhi*** if the employee's stools are negative for ***S. typhi*** based on testing of at least 3 consecutive stool specimen cultures that are taken:

(1) Not earlier than 1 month after onset,
(2) At least 48 hours after discontinuance of antibiotics, and
(3) At least 24 hours apart; and

(B) If one of the cultures taken as specified in (A) of this section is positive, repeat cultures are taken at intervals of 1 month until at least 3 consecutive negative stool specimen cultures ate obtained.

(C) An employee who was infected with ***Shigella*** spp. or ***Escherichia coli*** 0157:H7 if the employee's stools are negative for ***Shigella*** spp. or ***E. coli*** 0157:H7 based on testing of 2 consecutive stool specimen cultures that are taken:

(1) Not earlier than 48 hours after discontinuance of antibiotics; and
(2) At least 24 hours apart.

(D) An employee who was infected with hepatitis A virus if:

(1) Symptoms cease; or
(2) At least 2 blood tests show falling liver enzymes.

Rhode Island Department of Health

Press Release Policy

July 2000

1. This policy increases departmental consistency and promotes internal awareness of the news messages disseminated to the media. It is the policy of HEALTH to issue press releases in a uniform way that ensures clarity, accuracy, and appropriate distribution.

2. HEALTH press releases address a variety of purposes, including advisories on current health issues, health alerts, study findings, grant award announcements, program reports, upcoming conferences, product recalls, and others.

3. The Director of Health is the official most identified with HEALTH. Press releases are conceived and prepared primarily as a message from the Director. Press releases should typically incorporate quotations from the Director, and other HEALTH officials, as appropriate, stating or reinforcing key points of the message. All quotations must be reviewed and approved by the person being quoted.

4. Press releases are appropriate for newsworthy events and activities significant to the general public or to a targeted audience of specific HEALTH programs. The guiding principle for a press release is that the message informs the public and does not simply advertise HEALTH. There are means more suitable for disseminating other kinds of information, such as newsletters, fact sheets, bulletins, and alerts.

5. For public health messages to be used by the media, they must be understandable to the general public. Each press release communicates a Single Overriding Health Communications Objective (SOHCO), the message HEALTH most wants to register with the reader. Press releases should be no more than one standard page (8 ½ x 11), single spaced, TNR or Arial 12 -point font. The HEALTH media release form requires a 2 inch top margin and a 1 ½ inch bottom margin.

6. As a general rule, press releases are prepared under the direction and approval of an Associate Director/Medical Director, reviewed and/or edited within the Office of Public Health Affairs, finalized and approved for release by the Director of Health, and issued by the Assistant Director of Health (Public Health Affairs).

7. Variations to this procedure may be authorized in advance by the Director of Health, or designee, when circumstances require the dissemination of information in so rapid a fashion that a normal sequence of review and release is not possible.

8. Press release content must be factually supportable and readily defensible under inquiry. Identify a HEALTH contact person by names. Title, phone number and extension (preferably connecting to a person and not a tape recording). The contact person must be available at (or through) the number given for a reasonable period after the press release

Public Information Policy
Prohibition Against the Release of Confidential Health Care Information
Guidelines for Public Information Regarding Reportable Incidents
Revised 6/15/04

Policy:

In compliance with federal law and section 5-37.3-1 et seq of the Rhode Island General Laws, the Rhode Island Department of Health provides only the following information about an individual (or individuals) involved in a reportable disease incident:

- Age: "child", "teen", "adult", "senior adult"
- Gender:
- City or town of residence (if 20,000 pop or greater)
- Disease or Condition:
- Status: "recovered or well," "under active medical treatment," "deceased"

Less information can be released if there is a reasonable expectation that knowledge of these characteristics will lead to the identification of the individual involved. The Department of Health will not confirm the identity of any patient.

Rationale:

The Rhode Island Department of Health (HEALTH) observes a legal and ethical requirement to protect the confidentiality of individual health care information. According to RI statute, HEALTH may not reveal "confidential health care information which explicitly or by implication identifies a particular patient". (RIGL 5-37.3-3). The diagnosis of a reportable disease or condition is confidential health care information.

However, the law also directs HEALTH to "publish and circulate, from time to time, information that the director may deem to be important and useful for diffusion among the people of the state." (RIGL 23-1-1) Typically, such information includes aggregate numbers, rates, trends and other statistics that cannot be connected with individuals.

In extraordinary circumstances HEALTH may determine that public notification of single, reportable incidents is essential to the public's health. Such notifications may include the occurrence of infectious diseases and/or conditions involving abuse or safety along with the steps that the public can take to avoid disease/injury and promote health. The sole criterion for this action is to provide contextual information that in the judgment of the Director of Health is necessary to prevent misinformation or rumor—especially during times of high public anxiety or intense media interest.

This information must be released in such a way as to assure that the identity of the patient will not be revealed.

Press Release Document Filename: pr-(topic)-ddmoyr.doc: _____
suggested format: pr-measles-13Oct03.doc

Rhode Island Department of Health
Press Release Checklist

Press Release Originated by:_____
(name)

_____
(office) (date)

1. **S**ingle **O**verriding **H**ealth **C**ommunication **O**bjective intended:_____

_____

2. To whom is the message directed? _____

3. Any implications/precautions beyond HEALTH?_____

_____

4. Are all quotes OK'd by source? Yes No Explain:_____

5. Any co-sponsors of the release involved?_____

5. Who should be notified in advance of release (Governor's Office, On-Call HEALTH Administrator, physicians, other)?_____

_____

6. Any special distribution channels required?_____

7. Quote from Dr. Nolan included/approved? _____

8. Refer to Website: www.HEALTH.ri.gov

9. Has originator provided the press release in electronic form (e-mail or diskette)? Yes No

Required Review and Approval:

Associate Director/Medical Director:_____
(signature) (date)

Approved

_____ Assistant Director of Health (Public Health Affairs)
_____ Director of Health

10. Final Press release e-mailed to Health Information Administrator (website) Yes No
11. Press Release placed on HEALTH website (final step): (Date): _____

Appendix O

Guidelines for Laboratory Identification of *Clostridium botulinum.* *Taken from CDC* Laboratory Response Network (LRN)

Level A Laboratory Guidelines for Identification of *Clostridium botulinum* Toxin

I. General: Laboratory Response Network (LRN) Level A laboratory procedures are designed to ensure the proper collection and distribution of appropriate specimens to designated testing laboratories.

II. Precautions: Refer to Procedure for Laboratory Safety and Decontamination.

III. Specimen

A. Acceptable specimens

1. Clinical specimens
2. Postmortem specimens
3. Culture/isolate
4. Food samples, solid or liquid
5. Environmental samples

B. Rejection criteria

1. Incomplete documentation: All specimens must include the sender's name and telephone number to contact for the preliminary report and additional information.
2. Improper packaging/shipping
3. Do not ship specimens to higher-level LRN laboratories without prior approval.

IV. Materials

A. Media: Anaerobic media (chopped meat or equivalent); follow standard laboratory procedures.

B. Supplies

1. Port-A-Cul vials (Becton Dickinson; catalog #4321609) or equivalent
2. Leakproof containers (i.e., sealed plastic bags, and other plastic containers)
3. Petroleum jelly, or petrolatum (Fisher Scientific; catalog #P661LB), or equivalent (e.g., Vaseline)
4. Sterile, nonbacteriostatic water
5. Packaging materials: Refer to Shipping Procedure.

Disclaimer: Names of vendors or manufacturers are provided as examples of suitable product sources; inclusion does not imply endorsement by the Centers for Disease Control and prevention, the Department of Health and Human Services, or the Federal Bureau of Investigation.

V. Quality control: Use standard laboratory criteria and procedures. cbo.la.cp.051303 5/13/03 Page 1 of 4

VI. Procedure

A. Collection: Collect samples according to established laboratory procedures.

1. Feces: Place into sterile unbreakable container and label carefully. Confirmatory evidence of botulism may be obtained from 10-50 g quantities (English walnut size); botulism has been confirmed in infants with only "pea-sized" stool samples.
2. Enema: Place ~20 ml into sterile unbreakable container and label carefully. If an enema must be given because of constipation, a minimal amount of fluid (preferably sterile, nonbacteriostatic water) should be used to obtain the specimen so that the toxin will not be unnecessarily diluted.
3. Gastric aspirate or vomitus: Place ~20 ml into sterile unbreakable container and label carefully.
4. Serum: Use red top or separator type tubes to obtain serum (no anticoagulant). Samples should be obtained as soon as possible after the onset of symptoms and before antitoxin is given. Enough blood should be collected to provide at least 10 ml of serum for mouse toxicity tests (usually 20 ml whole blood); serum volumes less than 3 ml will provide inconclusive results. Whole blood should not be sent as it typically undergoes excessive hemolysis during transit.
5. Tissue or exudates: Place into sterile unbreakable container and label carefully. Specimens should be placed in Port-A-Cul vials (Mena, 1978) and sent to the appropriate laboratory, preferably without refrigeration, for attempted isolation of *C. botulinum*.
6. Postmortem: Obtain specimens of intestinal contents from different levels of small and large intestines. Place ~10 g per specimen into sterile unbreakable container and label carefully. Obtain gastric content, serum, and tissue specimens if/as appropriate (refer to A. 3, 4, and 5 above).
7. Culture: Ship suspicious isolates anaerobically (overlay liquid media with 2-inch sterile petroleum jelly or petrolatum; melt/temper prior to overlaying culture). Cultures may be shipped at room temperature or refrigerated.
8. Food specimens: Foods should be left in their original containers if possible, or placed in sterile unbreakable containers and labeled carefully. Place containers individually in leakproof containers (i.e., sealed plastic bags) to prevent cross-contamination during shipment. Empty containers with remnants of suspected foods can be examined.
9. Swab samples (environmental or clinical): Send clinical swabs in an anaerobic transport medium (e.g., Port-A-Cul tubes) (Mena, 1978). Environmental swabs (from which spores may be isolated) may be sent in plastic containers without any medium. Swabs may be shipped at room temperature or refrigerated. Collect 3-4 swabs from each potential site.
10. Environmental samples: Collect a sample in the size indicated below for each possible location.
    (1) Soil (50-100 g)
    (2) Water (=100 ml)

B. Shipping: Refer to Shipping Procedure; complete and attach appropriate documentation.

1. Specimens sent to a distant laboratory should be placed in sterile leakproof containers, then in insulated shipping containers with refrigerant (sealed ice packs, cold packs), labeled "MEDICAL EMERGENCY, BIOLOGICAL HAZARD,
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REFRIGERATE ON ARRIVAL" and should be shipped by the most rapid means available. Most of the major airlines have a special package handling service for expedited shipments. Do not send by U.S. Postal Service; ship as hazardous materials.
2. If an unavoidable delay of several days is anticipated, the specimens (serum or stool) should be kept frozen and then packed in an insulated container with dry ice and proper cushioning material for shipment. Freezing does not significantly affect the stability of botulinum toxin in specimens; freezing does reduce the probability of recovering *C. botulinum*. Since direct detection of toxin provides the best laboratory confirmation of botulism, priority should be given to preserving preformed toxin prior to transport.
3. The receiving laboratory should be notified in advance by telephone as to when and how specimens will be shipped, and when they will arrive.
4. Forward patient history and clinical symptom information to reference laboratory with the specimens.

VII. Reporting/action

A. Consult with state public health laboratory director (or designate) if *C. botulinum* toxin is suspected.

B. General instruction and information

1. Preserve original specimens pursuant to a potential criminal investigation and possible transfer to an appropriate LRN laboratory as instructed.
2. Environmental/nonclinical samples and samples from announced events should not be received by a Level A laboratory; submitter should contact the state public health laboratory directly.
3. The state public health laboratory/state public health department will coordinate notification of local FBI agents as appropriate.
4. Assist local law enforcement efforts in conjunction with guidance received from the state public health laboratory.
5. FBI and state public health laboratory/state public health department will coordinate the transfer of isolates/specimens to a higher level LRN laboratory as appropriate.

C. In conjunction with state public health laboratory, the laboratory may contact CDC as appropriate.

1. Emergency number, 24 h a day, 7 days a week: 770-488-7100
2. National Botulism Surveillance and Reference Laboratory: 404-639-3867

VIII. Limitations

A. If the patient has been taking any medication that might interfere with toxin assays or culturing of the stool, the laboratory should be notified. For example, it has been demonstrated that anticholinesterase drugs given orally to patients for myasthenia gravis can interfere with mouse botulinum toxin assays of stool extracts (Horwitz,

1976).

B. Recovery of viable cells from specimens often proves difficult. Proper handling,

packaging, and shipping with minimal delay improves probability of recovery.

IX. Procedure notes

A. Suggested specimens based on form of botulism

1. Foodborne
   a. Clinical material: Serum, gastric contents, vomitus, stool, return from sterile water or saline enema
   b. Autopsy samples: Intestinal contents and gastric contents (serum if available)
   c. Food samples
2. Infant
   a. Feces
   b. Return from sterile water or saline enema
   c. Serum: Although circulating toxin may be detected in infants with botulism, it is rare. Shipment of other specimens should not be delayed while waiting for serum collection.
   d. Postmortem samples: Intestinal contents from different levels of small and large intestine
   e. Food and environmental samples as appropriate for the investigation
3. Wound
   a. Serum
   b. Exudate, tissue, or swab samples of wound transported in an anaerobic transport medium
   c. Feces or return from sterile water enema (wound may not be source)
   d. An isolate of suspected *C. botulinum* (maintain under anaerobic conditions)
4. Intentional toxin release (inhalational or ingested)
   a. Serum
   b. Feces or return from sterile water enema
   c. Food, solid or liquid
   d. Environmental or nasal swabs
   e. Gastric aspirate

B. Specimen-related information

1. Food
   a. Foods most likely to allow growth of *C. botulinum* will have a pH range of 3.5-7.0, the most common pH is 5.5-6.5. However, suspected foods, regardless of pH, can be examined since localized environmental conditions may be present that may support the growth of *C. botulinum*.
   b. Botulinum toxin in commercial products is rare. The state public health laboratory should notify the FDA at 301-443-1240 if a commercial product is suspected of containing botulinum toxin.
2. Feces: *C. botulinum* has been isolated from stools following antitoxin treatment.

TABLE 1: Clinical Features of the Main Types of Foodborne Illness

Usual Incubation	Typical Symptoms	Possible Cause
Immediate		
< 1 hour-3 hours	Vomiting, flushing, itching, rash, difficulty breathing	Copper, other chemicals, allergic reaction, Scombroid poisoning
Short		
1-5 hours	Vomiting, nausea, sometimes diarrhea and cramps	*Bacillus cereus* (preformed enterotoxin)
2-6 hours	Vomiting, nausea, diarrhea	*Staphylococcal aureus*
Intermediate		
8-18 hours	Diarrhea, abdominal pain	*Clostridium perfringens*
8-16 hours	Diarrhea, abdominal pain	*Bacillus cereus* (diarrheal toxin)
Long		
12-24 hours	Nausea, vomiting, diarrhea lasting 1-2 days	Small round structured viruses (Noroviruses)
12-24 hours	Diarrhea, abdominal pain	**Vibrio parahaemolyticus**
12-36 hours	Weakness, double vision, difficulty swallowing, dry mouth	*Clostridium botulinum*
12-48 hours	Diarrhea, fever, abdominal pain lasting several days	Salmonella species
1-2 days	Diarrhea, often bloody	*E. coli* (toxigenic species)
1-3 days	Abdominal pain, bloody and mucoid diarrhea, fever	*Shigella* species
2-5 days	Diarrhea (sometimes bloody), abdominal pain, fever	*Campylobacter* species
7-10 days	Very watery diarrhea, nausea, vomiting, gas, malaise, weight loss	Cyclospora
1-2 weeks	Diarrhea, bloating	*Cryptosporidium parvum*
1-3 days	Fever or constipation	*Salmonella typhi*
15-50 days	Jaundice, malaise, fever, diarrhea	Hepatitis A
1-10 weeks	Mild “flu”, malaise, meningitis	**Listeria monocytogenes**

Source: Data adapted from Department of Health, Mgt. of Outbreaks of Foodborne Illness, London, 1994

TABLE 2: Summary of Foodborne Infection and Foodborne Intoxication

	Foodborne Infection	Foodborne Intoxication
Incubation Period	Generally rather long, usually measured in days	Generally rather short, often measured in minutes or hours
Typical Symptoms	Diarrhea, nausea, vomiting, abdominal cramps. Fever is often present.	Vomiting is more common. Can range from nausea to vomiting to interference with taste, touch and muscle movements (e.g., double vision, weakness, numbness, tingling of face, disorientation, flushing)
Pathogens	Infection: *Salmonella* species, Hepatitis A, *Shigella* species, *Giardia lamblia Campylobacter* species. *Yersinia* species, *Listeria monocytogenes, Vibrio parahaemolyticus, Vibrio vulnificus*, rotavirus, Norwalk virus, *Toxoplasma gondii, Cyclospora cayetanensis, Cryptosporidum parvum* Toxin-medicated infection: *C. botulinum* (infant*), B. cereus* (long incubation), *E. coli species, V. cholerae, C. perfringens*	C. Botulinum (adult), *S. aureus B, cereus* (short incubation), certain metals, certain wild mushrooms, certain fish and *shellfish*

TABLE 3: Common Foodborne Diseases Caused by Bacteria

Disease (causative agent)	Latency Period (duration)	Principal Symptoms	Typical Foods	Mode of Contamination	Prevention of Disease
(Bacillus cereus) food poisoning, diarrheal	8-16 hr (12-24 hr)	Diarrhea, cramps occasional vomiting	Meat products, soups, sauces, vegetables	From soil or dust	Thorough heating and rapid cooling of foods
(Bacillus cereus) food poisoning, emetic	1-5 hr (6-24 hr)	Nausea, vomiting, sometimes diarrhea and cramps	Cooked rice and pasta	From soil or dust	Thorough heating and rapid cooling of foods
Botulism; food poisoning (heat labile toxin of (*Clostridium botulinum)*	12-36 hr (months)	Fatigue, weakness, double vision, slurred speech, respiratory failure, sometimes death	Types A & B: vegetables, fruits, meat, fish, and poultry products, condiments: Type E: fish and fish products	Types A & B: from soil or dust; Type E: water and sediments	Thorough heating and rapid cooling of foods
Botulism; food poisoning infant infection	3-30 days (Variable)	Constipation, weakness, respiratory failure, sometimes death	Honey, soil	Ingested spores from soil, dust or honey colonize intestine	Do not feed honey to infants – will not prevent all
Campylobacteriosis (*Campylobacter jejuni)*	3–5 days (2–10 days)	Diarrhea, abdominal pain, fever, nausea, vomiting	Infected food-source animals	Chicken, raw milk	Cook chicken thoroughly; avoid cross-contamination; irradiate chickens; pasteurize milk
Cholera (Vibrio cholerae)	2–3 days hours to days	Profuse, watery stools; sometimes vomiting, dehydration; often fatal if untreated	Raw or undercooked seafood	Human feces in marine environment	Cook seafood thoroughly; general sanitation
(Clostridium perfringens) food poisoning	8–22 hr (12–24 hr)	Diarrhea, cramps, rarely nausea and vomiting	Cooked meat and poultry	Soil, raw foods	Thorough heating and rapid cooling of foods

Disease (causative agent)	Latency Period (duration)	Principal Symptoms	Typical Foods	Mode of Contamination	Prevention of Disease
(Escherichia coli) foodborne infection: enterohemorrhagic	12-60 hr (2-9 days)	Watery, bloody diarrhea	Raw or undercooked beef, raw milk	Infected cattle	Cook beef thoroughly; pasteurize milk
(Escherichia coli) enteroinvasive	At least 18 hr (uncertain)	Cramps diarrhea, fever, dysentery	Raw foods	Human fecal contamination, direct or via water	Cook foods thoroughly; general sanitation
(Escherichia coli) foodborne infection: enterotoxigenic	10-72 hr (3-5 days)	Profuse watery diarrhea; sometimes cramps, vomiting	Raw foods	Human fecal contamination, direct or via water	Cook foods thoroughly; general sanitation
Listeriosis *(Listeria monocytogenes)*	3-70 days	Meningoencephalitis; still births; septicemia or meningitis in newborns	Raw milk, cheese and vegetables	Soil or infected animals, directly or via manure	Pasteurization of milk; cooking
Salmonellosis *(Salmonella species)*	5-72 hr (1-4 days)	Diarrhea, abdominal pain, chills, fever, vomiting, dehydration	Raw and undercooked eggs; raw milk, meat and poultry	Infected food-source animals; human feces	Cook eggs, meat and poultry thoroughly; pasteurize milk; irradiate chickens
Shigellosis *(Shigella species)*	12-96 hr (4-7 days)	Diarrhea fever, nausea; sometimes vomiting, cramps	Raw foods	Human fecal contamination, direct or via water	General sanitation; cook foods thoroughly
Staphylococcal food poisoning (heat stable enterotoxin of *Staphylococcus aureus)*	1-6 hr (6-24 hr)	Nausea, vomiting, diarrhea, cramps	Ham, meat and poultry products, cream-filled pastries, whipped butter, cheese	Handlers with colds, sore throats or infected cuts, food slicers	Thorough heating and rapid cooling of foods
Streptococcal foodborne infection (*Streptococcus pyogenes)*	1-3 days (varies)	Various, including sore throat, erysipelas, scarlet fever	Raw milk, deviled eggs	Handlers with sore throats, other “strep” infections	General sanitation, pasteurize milk

Disease (causative agent)	Latency Period (duration)	Principal Symptoms	Typical Foods	Mode of Contamination	Prevention of Disease
Vibrio parahaemolyticus foodborne infection	12-24 hr (4-7 days)	Diarrhea, cramps, sometimes nausea, vomiting, fever headache	Fish and seafood	Marine coastal environment	Cook fish and seafood thoroughly
Vibrio vulnificus foodborne infection	In person with high serum iron: 1 day	Chills, fever, prostration, often death	Raw oysters and clams	Marine coastal environment	Cook shellfish thoroughly
Yersiniosis (*Yersinia enterocolitica)*	3-7 days (2-3 weeks)	Diarrhea, pains mimicking appearance of appendicitis fever, vomiting, etc	Raw or undercooked pork and beef; tofu packed in spring water	Infected animals especially swine; contaminated water	Cook meats thoroughly, chlorinate water

Source: Table was extracted from Foodborne Illness Investigation and Control Reference Manual, Massachusetts Department of Public Health, September 1997.

TABLE 4: Common Foodborne Diseases Caused by Viruses

Disease (Causative agent)	Onset (duration)	Principal Symptoms	Typical Foods	Mode of Contamination	Prevention of Disease
Hepatitis A (Hepatitis A virus)	15-50 days (weeks to months)	Fever, weakness nausea, discomfort, often jaundice	Raw or undercooked shellfish; sandwiches, salads, etc.	Human fecal contamination, via water or direct	Cook shellfish thoroughly; general sanitation
Viral gastroenteritis (Norwalk-like viruses)	1-2 days (1-2 days)	Nausea, vomiting, diarrhea, pains, headache, mild fever	Raw or undercooked shellfish; sandwiches, salads, etc.	Human fecal contamination, via water or direct	Cook shellfish thoroughly; general sanitation
Viral Gastroenteritis (rotaviruses)	1-3 days (4-6 days)	Diarrhea, especially in infants and children	Raw or mishandled food	Probably human fecal contamination	General sanitation

Source: Table was extracted from Foodborne Illness Investigation and Control Reference Manual, Massachusetts Department of Public Health, September 1997.

Table 5: Foodborne Diseases Caused by Fungi Other than Mushrooms

Disease (Causative agent)	Latency Period (duration)	Principal Symptoms	Typical Foods	Mode of Contamination	Prevention of Disease
Aflatoxicosis ("aflatoxins" of *Aspergillus flavus* and related molds)	Varies with dose	Vomiting, abdominal pain, liver damage, liver cancer (mostly Africa and Asia)	Grains, peanuts, milk	Molds grow on grains and peanuts in field or storage; cows fed moldy grain	Prevent mold growth; don't eat or feed moldy grain or peanuts; treat grain to destroy toxins
Alimentary toxic aleukia ("trichothecene" toxin of *Fusarium* molds)	1-3 days (weeks to months)	Diarrhea, nausea, vomiting; destruction of skin and bone marrow; sometimes death	Grains	Mild growth on grain, especially if left in the field through winter	Harvest grain in the fall; don't use moldy grain
Ergotism (toxins of *Claviceps purpurea)*	Varies with dose	Gangrene (limbs die and drop off); or convulsions and dementia; abortion (now not seen in the U.S.)	Rye; or wheat, barley, and oats	Fungus grows on grain in the field; grain kernel is replaced by a "sclerotium"	Remove sclerotia from harvested grain

Source: Table was extracted from Foodborne Illness Investigation and Control Reference Manual, Massachusetts Department of Public Health, September 1997.

TABLE 6: Foodborne Diseases Caused by Protozoa and Parasites

Disease (Causative agent)	Onset (duration)	Principal Symptoms	Typical Foods	Mode of Contamination	Prevention of Disease
(PROTOZOA) Amebic dysentery *(Entamoeba histolytica)*	2-4 weeks (varies)	Dysentery, fever, chills; sometimes liver abscess	Raw or mishandled foods	Cysts in human feces	General sanitation; thorough cooking
Cryptosporidiosis (*Cryptosporidium parvum)*	1-12 days (1-30 days)	Diarrhea; sometimes fever, nausea and vomiting	Mishandled foods	Oocysts in human feces	General sanitation; thorough cooking
Giardiasis (*Giardia lamblia)*	5-25 days (varies)	Diarrhea with greasy stools, cramps, bloat	Mishandled foods	Cysts in human and animal feces, directly or via water	General sanitation thorough cooking
Toxoplasmosis (*Toxoplasma gondii)*	10-23 days (varies)	Resembles mononucleosis; fetal abnormality or death	Raw or undercooked meats; raw mild; mishandled foods	Cysts in pork or mutton, rarely beef; oocycts in cat feces	Cook meat thoroughly pasteurize milk; general sanitation
(ROUNDWORMS, Nematodes) Anisakiasis *(Anisakis simplex, Pseudoterranova decipiens)*	Hours to weeks (varies)	Abdominal cramps; nausea, vomiting	Raw or undercooked marine fish, squid or octopus	Larvae occur naturally in edible parts of seafood	Cook fish thoroughly or freeze at –4°F for 30 days
Ascariasis *(Ascaris lumbricoides)*	10 days-8 weeks (1-2 years)	Sometimes pneumonitis, bowel obstructions	Raw fruits or vegetables that grow in or near soil	Eggs in soil, from human feces	Sanitary disposal of feces; cooking food
Trichinosis (*Trichinella spiralis)*	8-15 days (weeks, months)	Muscle pain, swollen eyelids, fever; sometimes digestive disturbances	Raw or undercooked pork or meat or carnivorous animals (e.g. bears)	Larvae encysted in animal's muscles	Thorough cooking of meat; freezing pork at 5°F for 30 days; irradiation

Disease (Causative agent)	Latency Period (duration)	Principal Symptoms	Typical Foods	Mode of Contamination	Prevention of Disease
(TAPEWORMS, Cestodes) Beef tapeworm (*Taenia saginata)*	10-14 weeks (20-30 years)	Worm segments in stool; sometimes digestive disturbances	Raw or undercooked beef	"Cysticerci" in beef muscle	Cook beef thoroughly or freeze below 23°F
Fish tapeworm (*Diphyllobothrium latum)*	3-6 weeks (years)	Limited: sometimes vitamin B-12 deficiency	Raw or undercooked fresh-water fish	"Plerocercoids" in fish muscle	Heat fish 5 minutes at 133°F or freeze 24 hours at 0°F
Pork tapeworm (*Taenia solium)*	8 weeks-10 years (20-30 years)	Worm segments in stool; sometimes "cysticercosis" of muscles, organs, heart or brain	Raw or undercooked pork; any food mishandled by a *T. solium* carrier	"Cysticerci" in pork muscle; any food-human feces with *T. solium* eggs	Cook pork thoroughly or freeze below 32°F general sanitation

Source: Table was extracted from Foodborne Illness Investigation and Control Reference Manual, Massachusetts Department of Public Health, September 1997.

TABLE 7: Foodborne Diseases Caused by Chemicals and Metals

Disease (Causative agent)	Latency Period (duration)	Principal Symptoms	Typical Foods	Mode of Contamination	Prevention of Disease
(TOXINS IN FIN FISH) Ciguatera poisoning (ciguatoxin, etc)	3-4 hr (rapid onset) 12-18 hr (days-months)	Diarrhea, nausea, vomiting, abdominal pain Numbness and tingling of face; taste and vision aberrations, sometimes convulsions, respiratory arrest and death (1-24hrs)	"Reef and island" fish: grouper, surgeon fish, barracuda, pompano, snapper, etc.	(Sporadic); food chain, from algae	Eat only small fish
Fugu or pufferfish poisoning (tetrodotoxin, etc.)	10-45 min to ≥3 hrs.	Nausea, vomiting, tingling lips and tongue, ataxia, dizziness, respiratory distress/arrest and sometimes death	Pufferfish, "fugu" (many species)	Toxin collects in gonads, viscera	Avoid pufferfish (or their gonads
Scombroid or histamine poisoning (histamine, etc.)	Minutes to few hours (few hours)	Nausea, vomiting, diarrhea, cramps, flushing, headache, burning in mouth	"Scombroid" fish (tuna, mackerel etc.): mahi-mahi, others	Bacterial action	Refrigerate fish immediately when caught
(TOXINS IN SHELLFISH) Amnesic shellfish poisoning (domoic acid)		Vomiting, abdominal cramps, diarrhea, disorientation, memory loss; sometimes death	Mussels, clams	From algae	Heed surveillance warnings
Paralytic shellfish poisoning (saxitoxin, etc)	<1 hr (<24 hr)	Vomiting, diarrhea, paresthesias of face, sensory and motor disorders; respiratory paralysis, death	Mussels, clams, scallops, oysters	From "red tide" algae	Heed surveillance warnings
(MUSHROOMS TOXINS) Mushroom poisoning (varies greatly among species)	<2 hrs to ≥3 days	Nausea, vomiting, diarrhea, profuse sweating, intense thirst, hallucinations, coma death	Poisonous mushrooms	Intrinsic	Don't eat wild mushrooms

Disease (Causative agent)	Latency Period (duration)	Principal Symptoms	Typical Foods	Mode of Contamination	Prevention of Disease
(PLANT TOXINS) Cyanide poisoning (cyanogenetic glycosides from plants)	(Large doses) 1-15 min	Unconsciousness, convulsions, death	Bitter almonds, cassava, some lima bean varieties, apricot kernels	Intrinsic, natural	Proper processing; avoid some so-called foods
(METALS) Cadmium	Depends on dose	Nausea, vomiting, diarrhea, headache, muscular aches, salivation, abdominal pain, shock, liver damage, renal failure	Acid foods, food grilled on shelves from refrigerator	Acid or heat mobilizes cadmium plating	Select foods contact surfaces carefully
Copper poisoning	Depends on dose (24-28 hr)	Nausea, vomiting, diarrhea	Acid foods, foods contacting copper, soda fountains, beverages	Acid mobilizes copper	Select food contact surfaces carefully
Lead poisoning	Depends on dose	Metallic taste, abdominal pain, vomiting, diarrhea, black stools, oliguria, collapse coma (also chronic effects)	Glazes, glasses, illicit whiskey	Lead dissolves in beverages and foods	Test glazes and glasses; avoid illicit whiskey
Mercury poisoning	Depends on dose	Metallic taste, thirst, abdominal pain, vomiting, bloody diarrhea, kidney failure	Treated seeds (fungicide); fish	International; food chain	Eat only seeds intended for food
Zinc poisoning	Depends on dose (24-48 hr)	Nausea, vomiting, diarrhea	Acid foods in galvanized containers	Acid mobilizes zinc plating	Select food contact surfaces carefully

Source: Table was extracted from Foodborne Illness Investigation and Control Reference Manual, Massachusetts Department of Public Health, September 1997